

Climate Initiatives Task Force

OCTOBER TASK FORCE MEETING



GOVERNOR'S
OFFICE OF
COASTAL
ACTIVITIES

Agenda

- I. Call to Order**
- II. Roll Call**
- III. Welcome and Opening Remarks**— *Harry Vorhoff, Office of the Governor*
- IV. Approval of Minutes**
- V. Report on September Special Equity Advisory Group Meeting** – *Colette Pichon Battle, Chair of Equity Advisory Group*
- VI. Overview of Evaluation Process and Meeting Objectives** —
Lindsay Cooper, Office of the Governor
- VII. Consequence Analysis of Draft Portfolio of Strategies and Actions** —
Soupy Dalyander & Allison DeJong, The Water Institute of the Gulf
- VIII. Review Comments and Discussion of Key Topics** —
Lindsay Cooper and Charles Sutcliffe, Office of the Governor; Task Force Members
- IX. Next Steps**— *Lindsay Cooper, Office of the Governor*
- X. Public Comment**
- XI. Adjourn**

Meeting Objectives

- Provide **overview of evaluation process** for Draft Portfolio of Strategies and Actions
- Provide **Consequence Analysis** results of Draft Portfolio against the Fundamental Objectives
- Share **process for revising Portfolio** based on Consequence Analysis and Review Comments
- **Task Force discussion on key topic areas**

Draft Documents Shared in August

DRAFT Portfolio of Climate Strategies and Actions

LOUISIANA CLIMATE INITIATIVES TASK FORCE

AUGUST 23, 2021

This draft climate portfolio, containing strategies and specific action concepts across 9 priority areas, represents another step forward in Louisiana's collaborative effort to identify implementable solutions to reducing the greenhouse gas (GHG) emissions driving climate change. The actions contained in this document were developed from extensive input from members of the Climate Initiatives Task Force's (Task Force) six sector committees and submissions from the general public. (For cross-reference, noted at the end of each action description is a number corresponding to associated [proposals](#) received in April.) These actions were informed by feedback from the Task Force's four advisory groups, and by research on best practices in other states. They also benefit from the many conversations held throughout the numerous Task Force meetings, cross-sector workshops, and public comment periods.

Despite all the thought and effort that has gone into this document, this portfolio is still an initial attempt at striking the balance between the needs of different stakeholders as well as the urgent need to address the root causes of climate change that are already being felt across our state. The draft portfolio is also an attempt to organize nearly 100 actions to reduce GHG emissions across all aspects of the Louisiana economy in a way that is coherent and comprehensive. As such, readers should review all sections together as they consider the full implications of this draft portfolio.

In the coming months, this draft action portfolio will evolve. It will undergo several public rounds of discussion, critique, and refinement. Advisory groups will once again provide feedback on how aspects of this portfolio support values related to a more equitable society, quality of life, the environment, and the economy. The Water Institute of the Gulf will again provide estimates of the impact of this portfolio on Louisiana's GHG emissions using the Energy Policy Simulator modeling tool to guide their analysis. All of these findings will be brought before the Task Force in early October for additional conversation.

Collaboration across government, the private sector, academics, and members of the public has led to the creation of this draft climate action portfolio. While it contains the most clearly defined vision for climate policy in Louisiana thus far, it is still unfinished. In the months ahead, some new actions may be added, others may be deleted, and many will be adjusted to be more effective or accurate. This document was created through robust participation from stakeholders, and continued participation from everyone concerned about climate change and how GHG emissions can be reduced in Louisiana will help make it even better as we work towards the set of strategies and actions in the final plan.

1

Louisiana Climate Action Plan

Draft, Partial, Final Report

DRAFT Sections for Public Comment

August 23, 2021



GOVERNOR'S
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Draft Portfolio

29 Strategies and 97 Actions
across the following Sections

**Clean Energy
Transition**

**Industrial
Decarbonization**

**Safe and Resilient
Energy and
Infrastructure for
Tomorrow's Needs**

**Actively Manage
Methane
Emissions**

**An Inclusive, Low-
Carbon Economy**

**Transportation,
Development, and
the Built
Environment**

**Natural and
Working Lands
and Wetlands**

**Collaboration and
Partnerships to
Ensure Successful
Implementation**

**Accountability and
Adaptability to
Ensure Lasting
Success**

Evaluation Process: August 24-October 8

Consequence Analysis coordinated by The Water Institute:

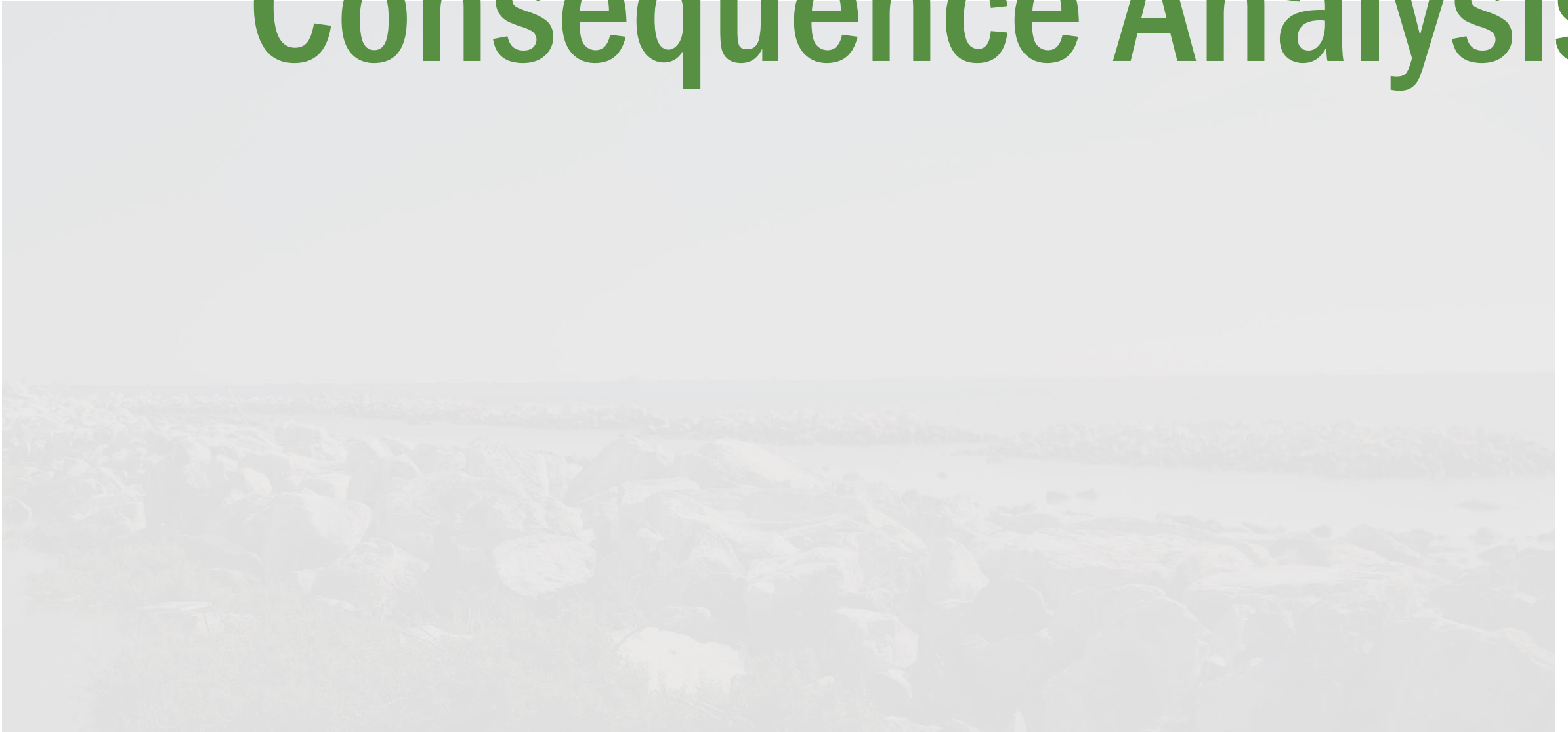
- GHG emissions modeling using Energy Policy Simulator tool
- Structured surveys completed by Advisory Group members
 - Evaluated positive and negative impacts of overall portfolio to Quality of Life, Equity, Short- and Long-Term Success, Economy and Workforce, Natural Resources, Resilience
 - Provided additional evaluation of specific strategies and actions

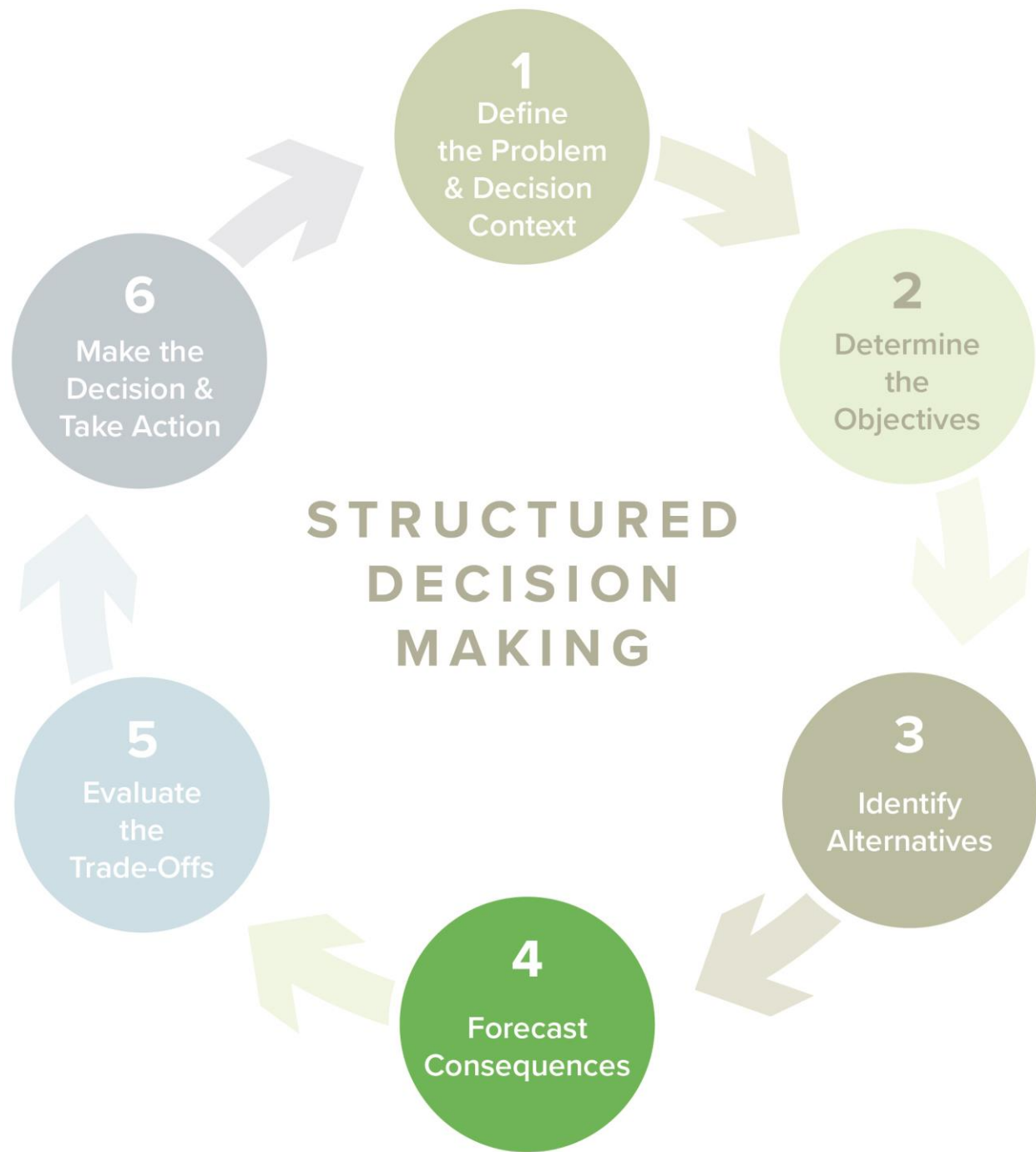


Review Comments provided to GOCA via:

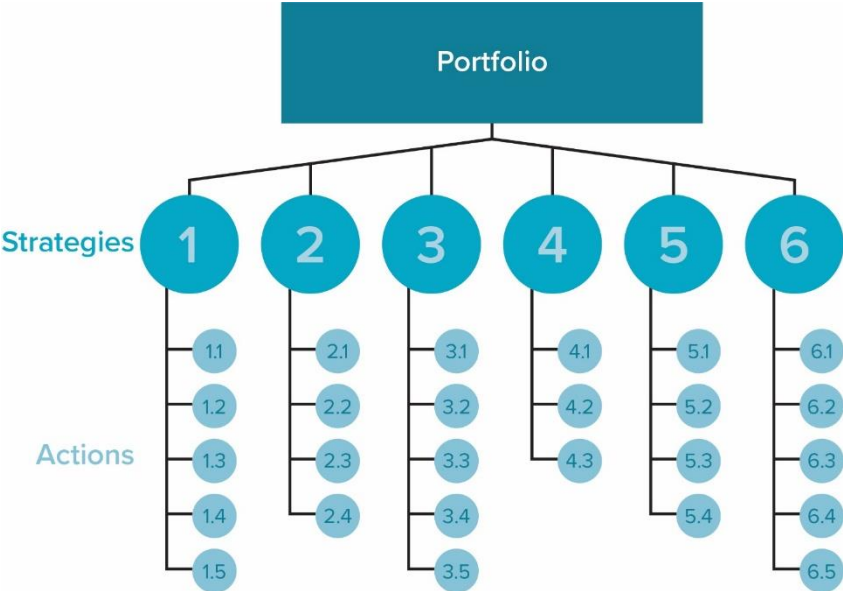
- Task Force and Sector Committee comments
- Additional policy recommendations on specific strategies and actions from Advisory Group members in survey
- State Agency and other implementation partner meetings
- Public Comment

Consequence Analysis



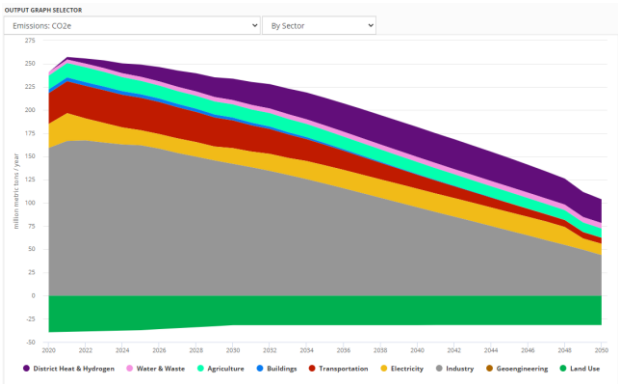


Consequence Analysis Components



Strategy & Action Portfolio

1) GHG Emission Reduction Objectives



2) Societal, Economic, and Other Objectives

Impact on Objective 1:

- Very Positive
- Positive
- Neutral
- Negative
- Very Negative

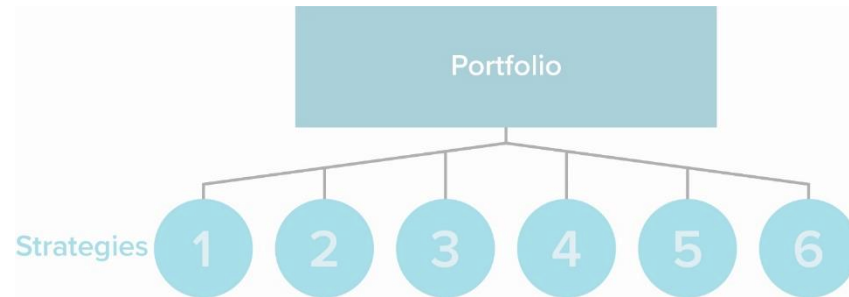
Considerations:

Fundamental Objectives: What we are evaluating against

Reducing Net Greenhouse Gas (GHG) Emissions	<ul style="list-style-type: none"> • Minimize net greenhouse gas emissions
Improving Quality of Life for Residents and Communities	<ul style="list-style-type: none"> • Maximize quality of, and access to, essential goods, services, and infrastructure for residents • Maximize positive public health outcomes and public safety • Maximize preservation of cultural heritage
Creating a More Equitable Society	<ul style="list-style-type: none"> • Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes • Maximize reduction and mitigation of institutionalized harms to historically underserved and marginalized people and communities. • Maximize engagement with and participation of communities in decision-making and implementation
Managing for Short- and Long-Term Success	<ul style="list-style-type: none"> • Maximize confidence of the public and stakeholders in the outcome of emissions-reduction strategies to increase support for their implementation • Maximize the efficiency and effectiveness of emissions-reduction strategies • Maximize timely implementation of emissions-reduction strategies • Maximize the durability of emissions-reduction strategies in an uncertain future
Strengthening the Economy and Workforce	<ul style="list-style-type: none"> • Maximize employment, economic opportunity, and support for Louisiana workers • Maximize economic growth
Conserving Natural Resources and Protecting the Environment	<ul style="list-style-type: none"> • Maximize preservation of natural resources and ecosystem services • Maximize environmental stewardship and support of healthy ecosystems
Adapting to a Changing Climate	<ul style="list-style-type: none"> • Increase resilience of the built and natural environment to climate change • Increase the resilience of communities to climate change

We have completed **two rounds** of consequence analyses:

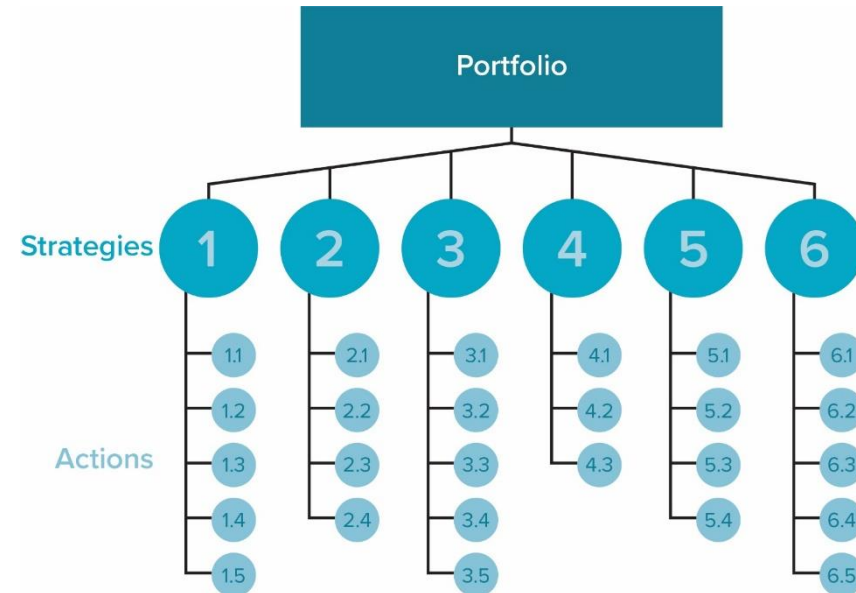
Round 1: Complete



Strategy Portfolios

In the first round, we intentionally framed **extreme hypothetical portfolios of strategies** to forecast consequences to our fundamental objectives.

Round 2: Aug-Oct



Strategy & Action Portfolio

This second round will analyze consequences of our **best first pass of the draft portfolio of strategies and actions** that will be included in the plan.

Goals of Second Consequence Analysis

- Help the Task Force understand the impacts of the draft portfolio as a whole.
- Help GOCA and the Task Force refine and improve the overall portfolio of strategies and actions in the plan.
- Inform how the details of actions and implementation steps are drafted to maximize co-benefits across our fundamental objectives.
- Understand where we will need additional focus in the years to come.



** Developing the strategies and actions for the final plan is an **iterative and collaborative process***

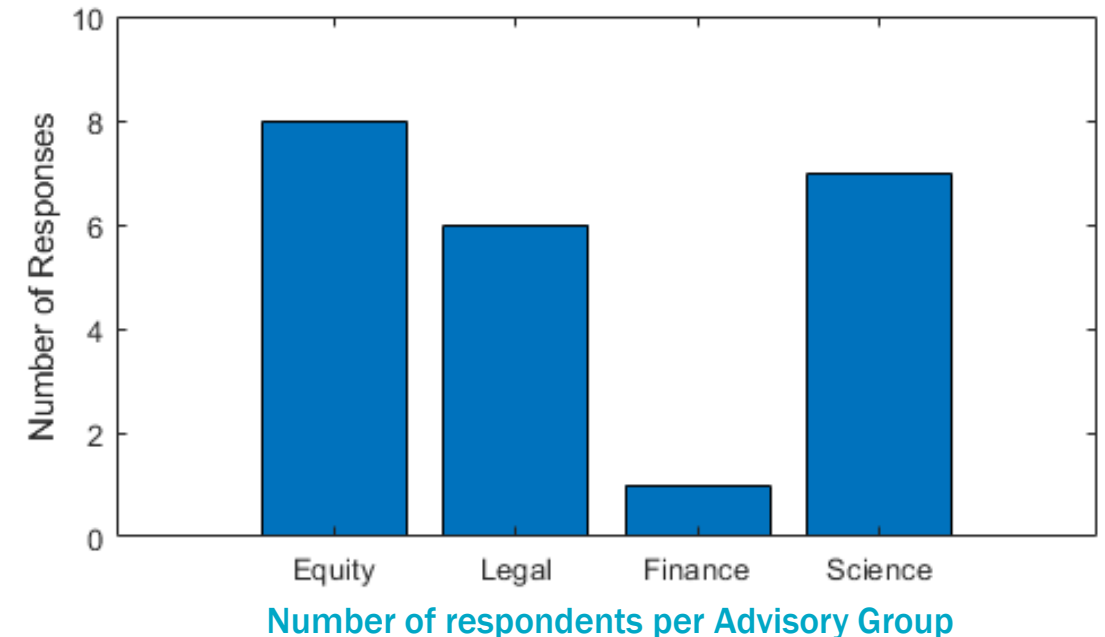
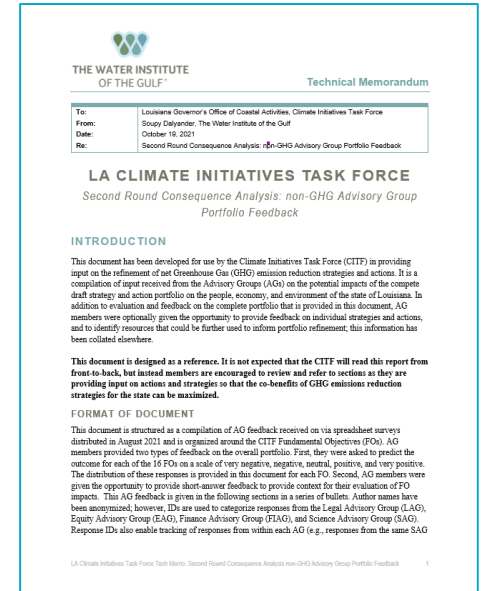
Advisory Group Feedback

Advisory Group members were asked to:

- Assess the portfolio on a scale of **very negative to very positive**.
- Evaluate any objective they felt they can evaluate based on their expertise, and to consider “cascading effects”
- Provide feedback and comments on the complete portfolio, including recommendations for additional actions
- Provide feedback and comment on individual strategies and actions (*optional*)
- Identify additional resources or references that could be used in evaluating the impacts of the strategies and actions (*optional*)



See Tech Memo for full survey responses on forecasted consequences of the overall portfolio

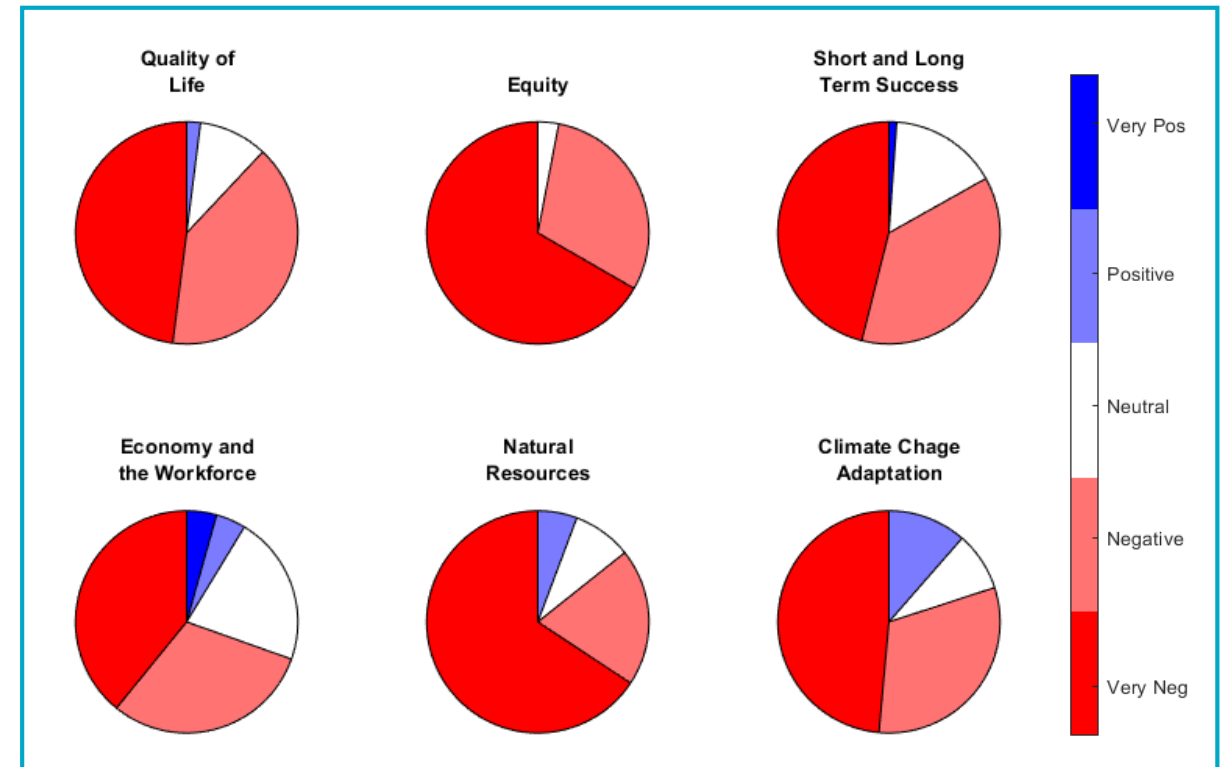


Hypothetical Portfolio 1: Business as Usual



➤ Predicted outcomes across objectives were *generally negative*

- **Status quo means falling behind**
 - Market pressure toward carbon neutral may impact LA economy, jobs
 - Existing needs for infrastructure repairs/upgrades will continue to grow
 - Disparate outcomes for marginalized people will continue to worsen
 - Cultural heritage loss along the coast
- **Increased hardship:** climate disasters, job losses increase need for investment to preserve quality of life but funds are increasingly scarce and competitive



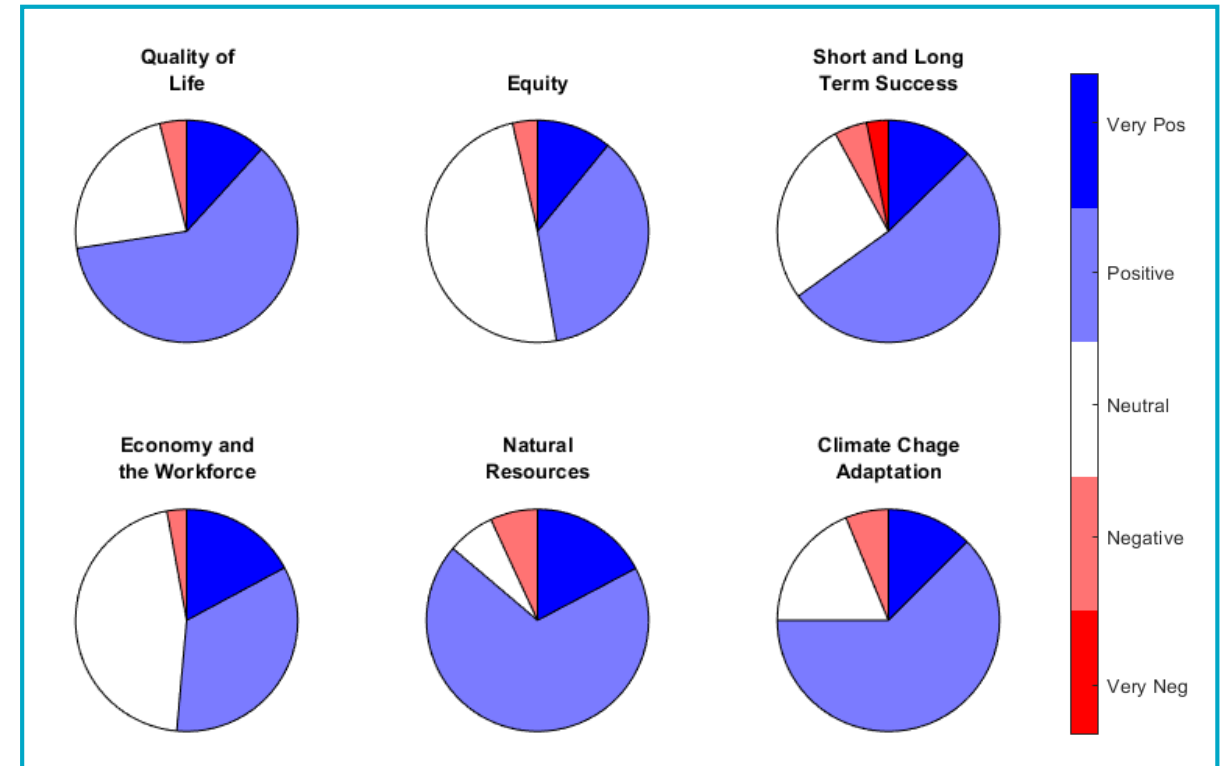
Results by Fundamental Objective Category

Draft Strategy and Action Portfolio



➤ Predicted outcomes across objectives were *generally positive or neutral*

- Majority **predicted positive or very positive** outcomes for:
 - *Quality of Life*
 - *Natural Resources*
 - *Short- and Long-Term Success*
 - *Climate Change Adaptation*
- Majority predicted **neutral or positive** outcomes for:
 - *Equity*
 - *Economy and the Workforce*



Results by Fundamental Objective Category

Quality of Life Objectives

Majority predicted **positive or very positive** outcomes for **access to essential goods and services** and **public health**. Noted were:

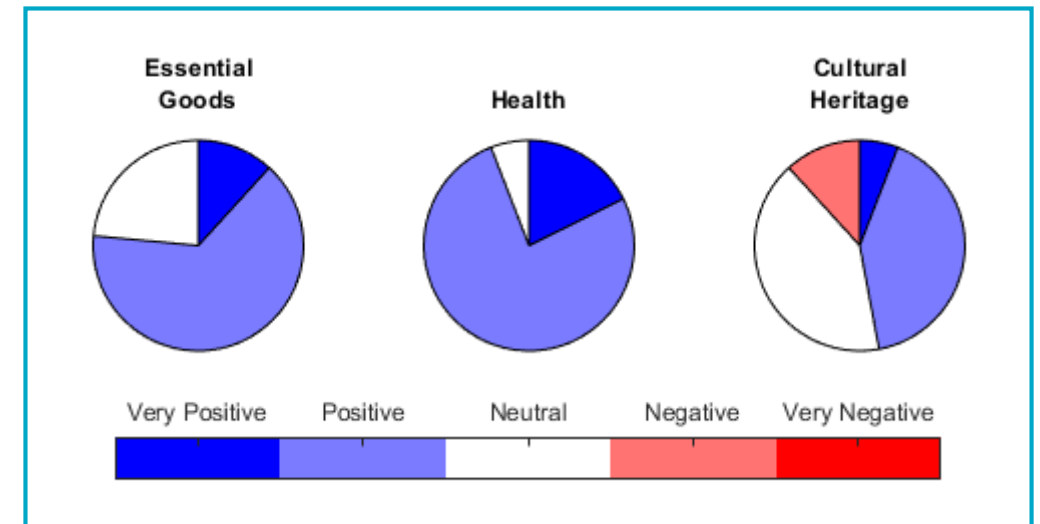
- Positive co-benefits of energy transition, including cleaner energy and improved access
- Health co-benefits of emissions reductions

Relatively **mixed feedback** on **cultural heritage**. Noted concerns:

- Lack of specificity on limiting risk CCUS pipelines could pose to marginalized and Indigenous communities, cultural heritage sites



Improving Quality of Life for Residents and Communities



- Maximize quality of, and access to, essential goods, services, and infrastructure for residents
- Maximize positive public health outcomes and public safety
- Maximize preservation of cultural heritage

Equity Objectives

Majority **positive or neutral** predicted outcomes for *reducing institutionalized harm* and *maximizing community engagement*. Noted were:

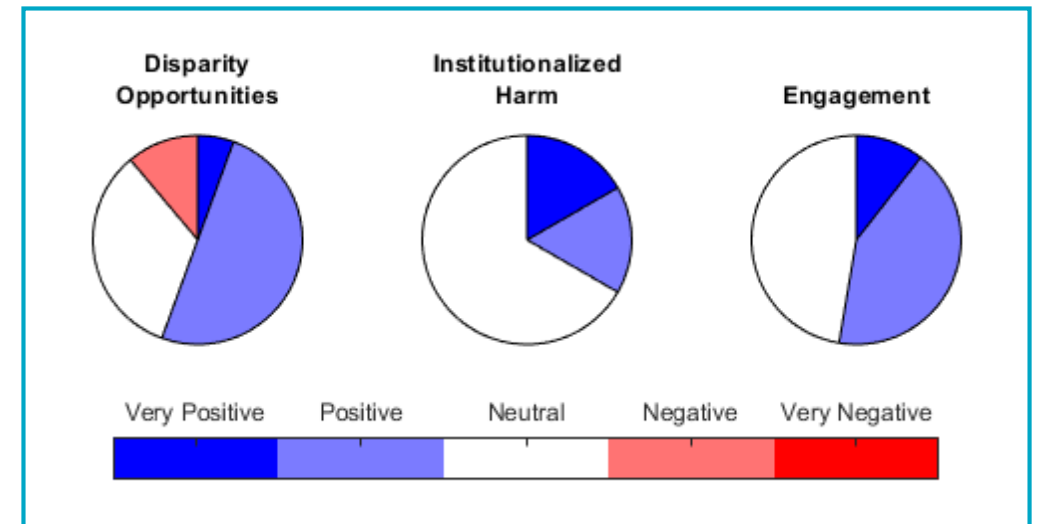
- Benefits of clean energy transition and inclusion of equity considerations
- Lack of specificity in community engagement, ownership, and leadership opportunities

Relatively **mixed feedback** on *disparity of future opportunities*. Noted were:

- Insufficient specific focus on equity considerations embedded throughout the plan
- Absence of goals/metrics for tracking outcomes, including at a community level



Creating a More Equitable Society



- Reduce socioeconomic, demographic, and geographic disparities in future opportunities and outcomes
- Maximize reduction and mitigation of institutionalized harms to historically underserved and marginalized people and communities.
- Maximize engagement with and participation of communities in decision-making and implementation

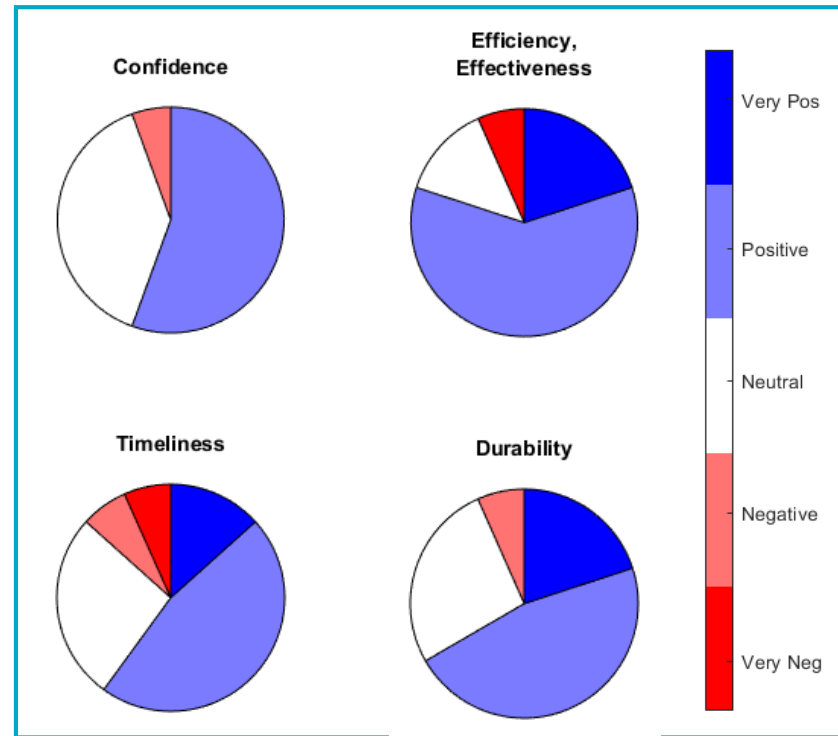
Short- and Long-term Success Objectives

Generally **positive or neutral** predicted outcomes, with some negative responses. Noted were:

- Potential for public support for bold action, but some lack of specificity in engagement/education and challenges of current polarized environment
- Dependency of timeliness on implementation pathways
- Uncertainty associated with some technologies and policy outcomes (e.g., voluntary vs. mandatory implementation)



Managing for Short- and Long-Term Success



- Maximize confidence of the public and stakeholders in the outcome of emissions-reduction strategies to increase support for their implementation
- Maximize the efficiency and effectiveness of emissions-reduction strategies
- Maximize timely implementation of emissions-reduction strategies
- Maximize the durability of emissions-reduction strategies in an uncertain future

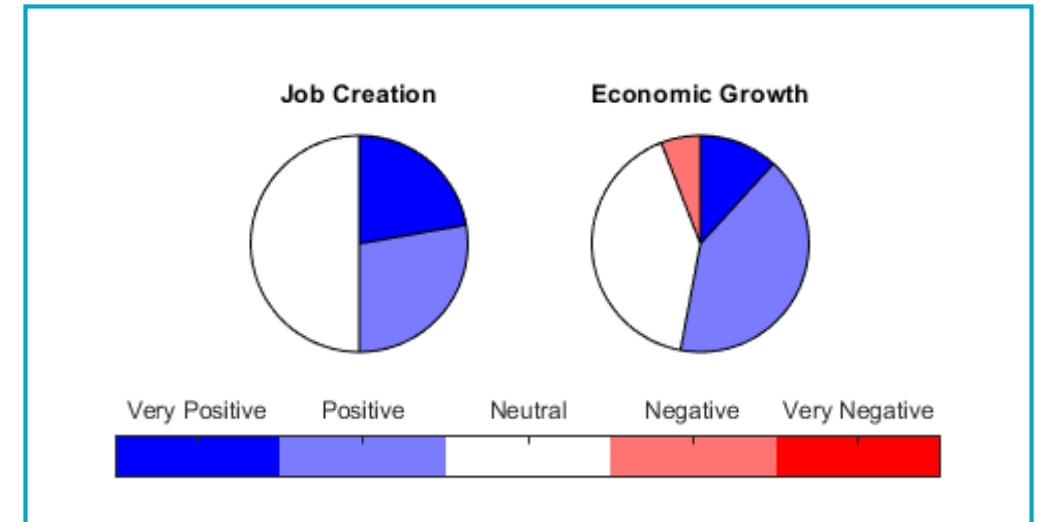
Economy Objectives

Majority **positive or neutral** predicted outcomes, with some negative response on ***economic growth***. Noted were:

- Potential variability in the quality of jobs that would be created
- Uncertainty in capacity to transition the workforce and economy quickly
- Unknown or negative impacts of transition on the economy in the near-term
- Absence of specificity how transition would be executed in order to ensure equitable outcomes for communities and residents, including those with varying educational backgrounds



Strengthening the Economy and Workforce



- Maximize employment, economic opportunity, and support for Louisiana workers
- Maximize economic growth

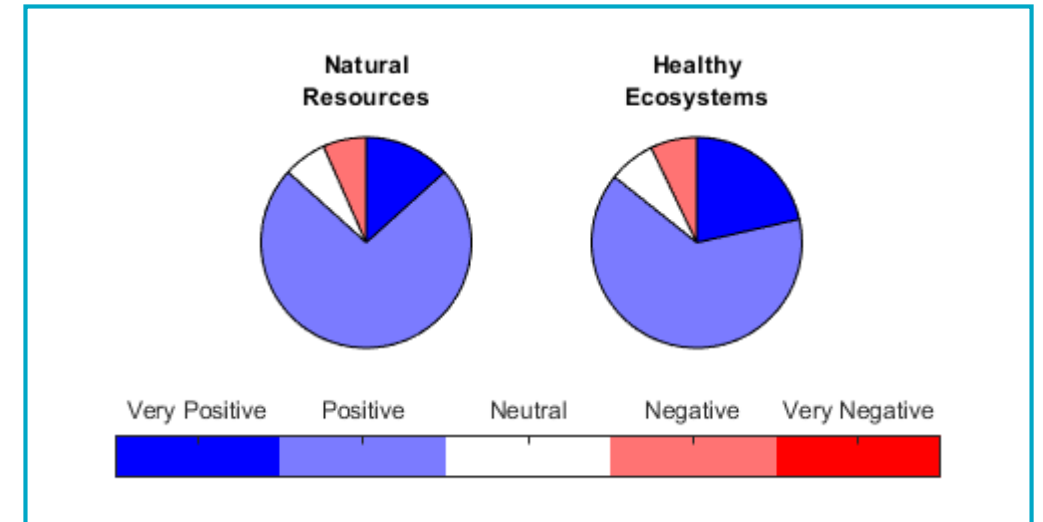
Environmental Objectives

Majority **positive** predicted outcomes, with some negative responses. Noted were:

- Benefits of renewable energy and other actions for the environment, but concern for potential impacts of CCUS.
- Uncertainty in whether actions could be successfully implemented and lack of specificity on path forward, particular outside the coastal zone.
- Improved reliability of environmental outcomes with benchmarking and tracking of emissions and other metrics, educational outreach, and community engagement.



Conserving Natural Resources and Protecting the Environment



- Maximize preservation of natural resources and ecosystem services
- Maximize environmental stewardship and support of healthy ecosystems

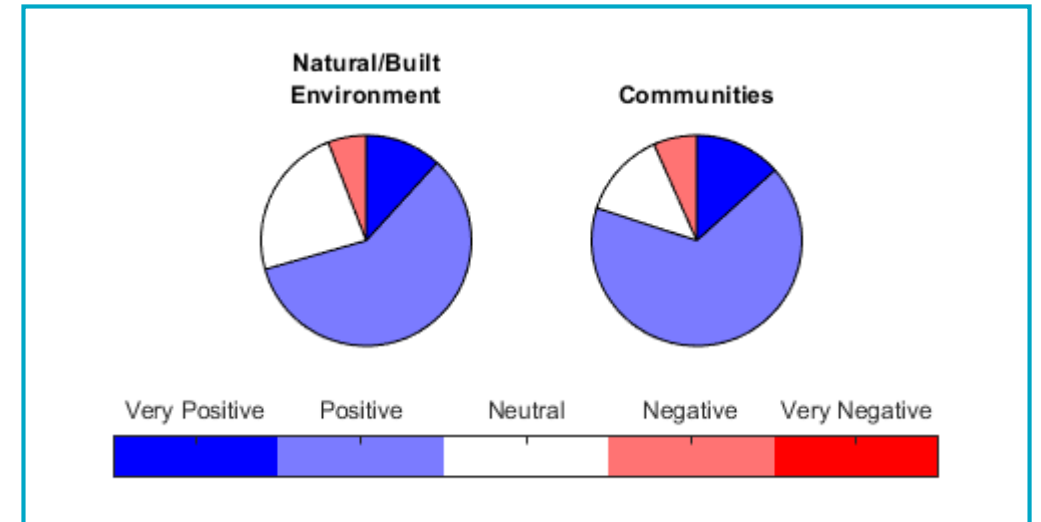
Adaptation Objectives

Majority **positive or neutral** predicted outcomes, with some negative responses. Noted were:

- Enhanced resilience associated with emissions reductions, particularly with rapid implementation.
- Benefits to water quality and flood risk reduction
- Challenges of implementation and associated risk to benefits, including legal/policy concerns, uncertainty in reliability/effectiveness of technological and industrial solutions, and threats that climate-related disasters pose.



Adapting to a Changing Climate



- Increase resilience of the built and natural environment to climate change
- Increase the resilience of communities to climate change

Evaluating Greenhouse Gas Emission Reductions

ENERGY POLICY SOLUTIONS

Change region

Learn more

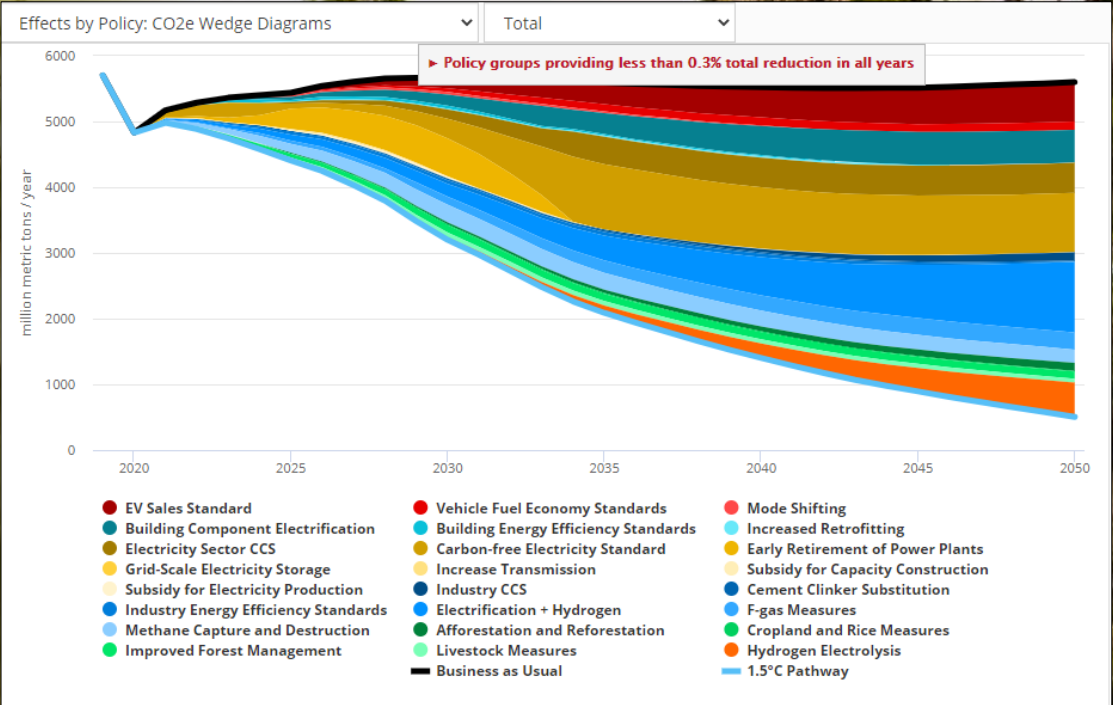
Sign in

What Are the Best Policies to Solve Climate Change?

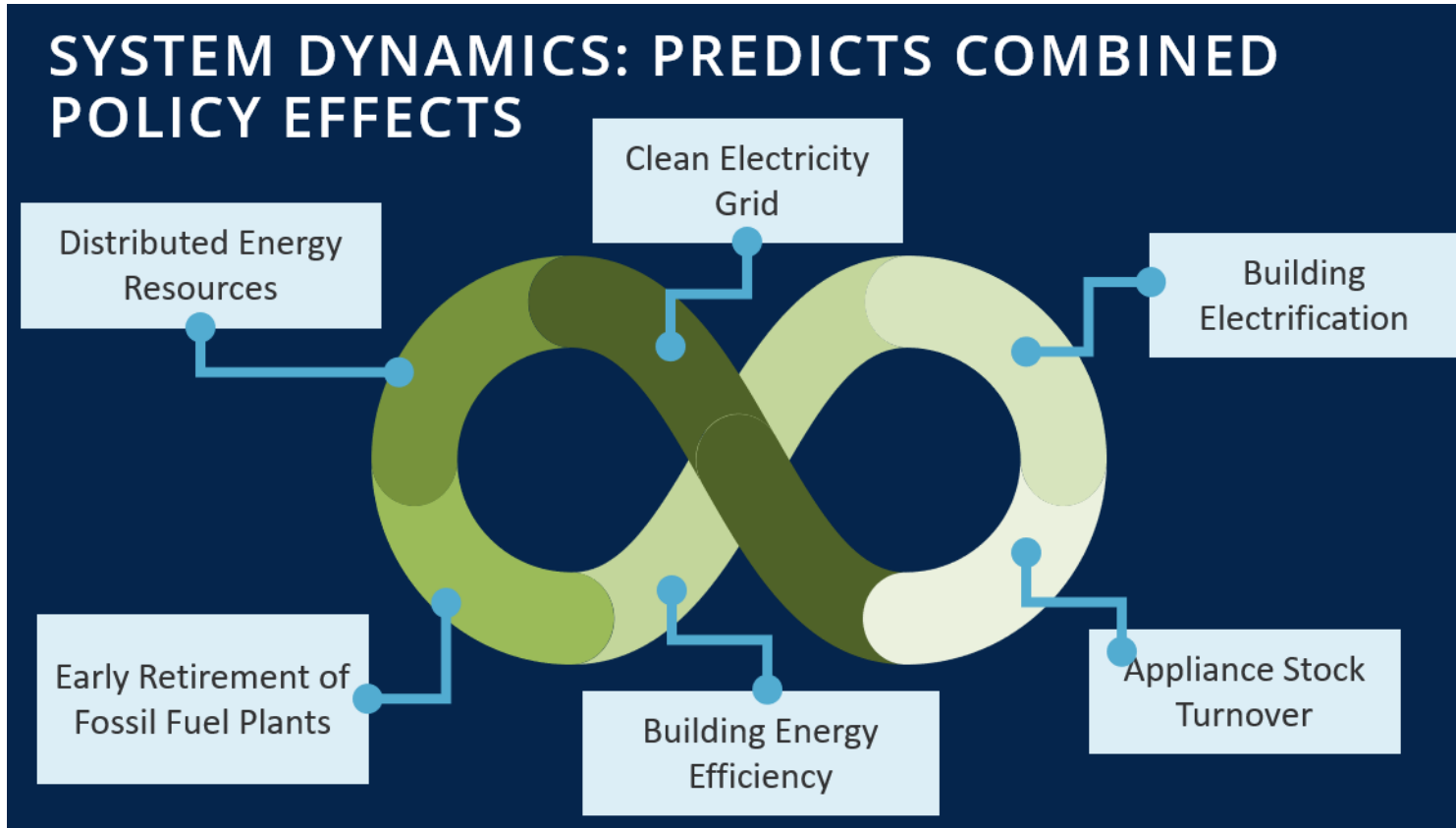
Designing energy policy correctly is tough work. Well-designed energy policies reduce pollution, cut consumer costs, and minimize dependence on foreign energy supplies. Done wrong, they can do the reverse, and increase pollution, lock in dirty technologies, or waste money.

Which energy policies can lower greenhouse gas emissions in Louisiana, and what will it cost? Discover the effects of various energy policies, build your favorite policy package, and share it with friends using the Energy Policy Simulator. Try it using the button below:

Enter Simulator



Energy Policy Simulator Tool



- The Energy Policy Simulator tool is developed by Energy Innovation, LLC.
- They have developed a state-level version for us to use in Louisiana that we can update with new data over time.
- The Planning Team used the beta version of the Louisiana EPS tool for both rounds of the consequence analysis.
- The Louisiana EPS is now available to the public!

Energy Policy Simulator Tool

EXTERNAL REVIEWERS, ADVISERS, AND CONTRIBUTORS

National Labs



Universities



Global Partners



- The EPS tool is currently used by multiple states and global versions are used in Canada, China, India, Mexico, and more.
- The tool is fully open source and all back-end documentation is available on Energy Innovation's website.
- **Learn more:**
<https://energypolicy.solutions/>

Two key framing points

➤ ***This is one analysis**, not a definitive yes or no answer. Interpretation is required on the front and back end to make this analysis useful.*



Approximating policies in the tool requires thinking through the steps that would be required to implement a given policy in Louisiana.

- What is feasible in what time frame?
- Who could set and enforce this policy?
- Based on the way the tool works, does this policy reasonably replicate the impacts that could be seen from an action as we've drafted it?



Interpreting model results requires thinking through a similar set of questions. Are these modeled results possible given our unique conditions and challenges?

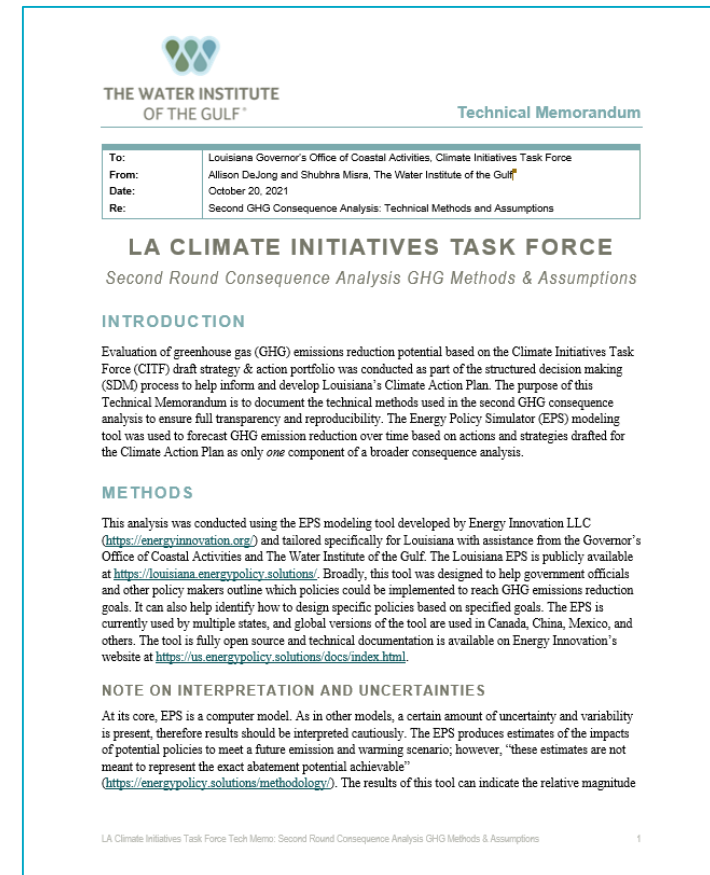
- What enabling actions would be required to achieve these results?
- Do we think this modeled trajectory accurately represents the reductions we can achieve? Or are there steps we could take to accelerate it?

Analyzing Consequences: *Modeling Note*

We have done our best to approximate in EPS the actions and strategies in the draft portfolio and present the consequences as shown in the model.

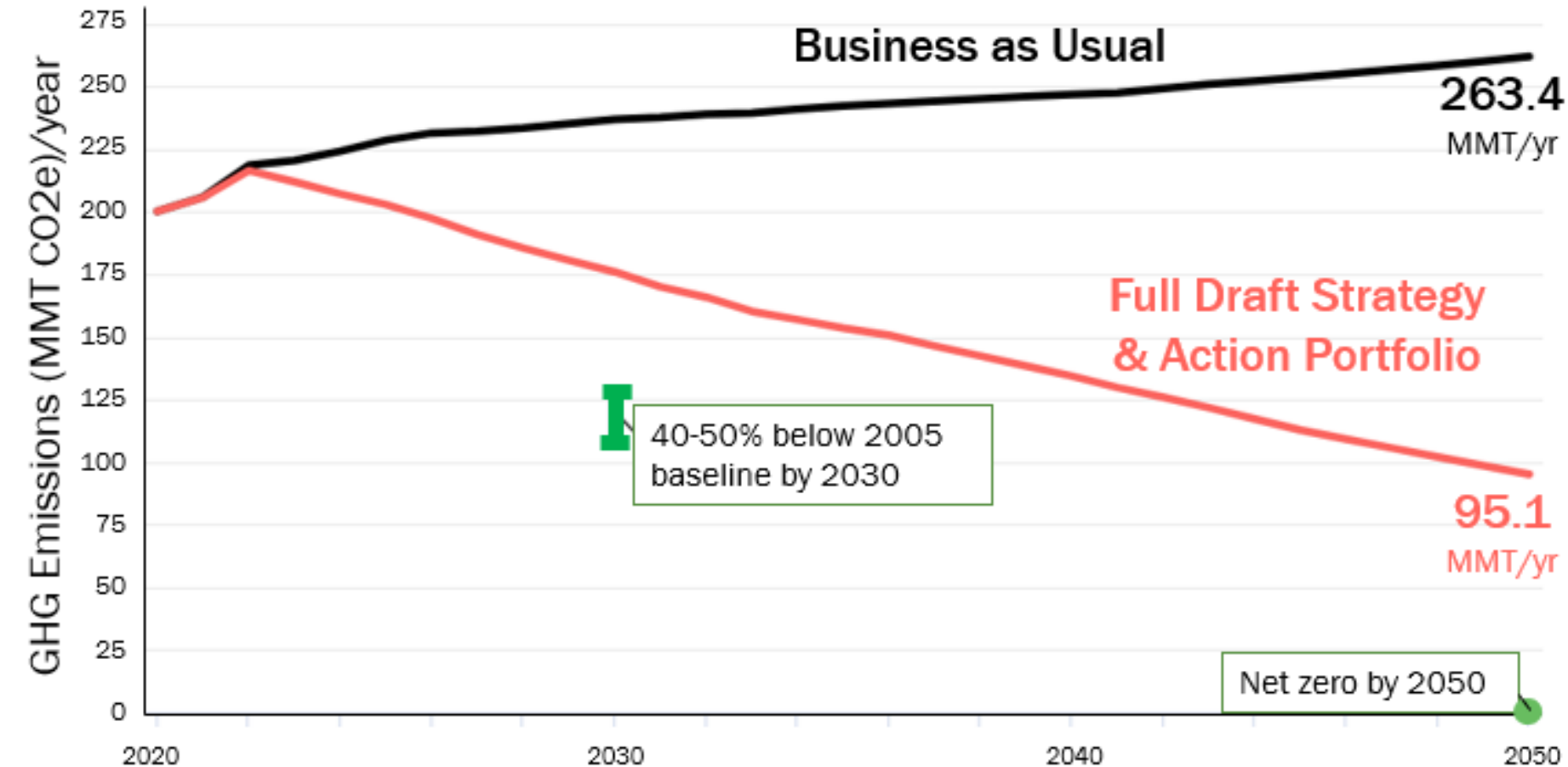
However, there are a range of uncertainties associated with this kind of modeling. In real life, we can't enact a policy by just switching it on – numerous different entities have to enact, fund, measure, regulate, monitor, maintain, etc. these kinds of policies. That is why we have actions, and why the EPS policies aim to approximate the wide and varied uncertainties that come from these kinds of actions.

In some cases, the model shows us key relationships between different kinds of policies, or offers places where we can easily change an implementation schedule or intensity of action. This moves us out of the realm of consequence and into policy design, but can offer insight into how we can think of our actions (Too reliant on one strategy? Not aggressive enough? Etc.)



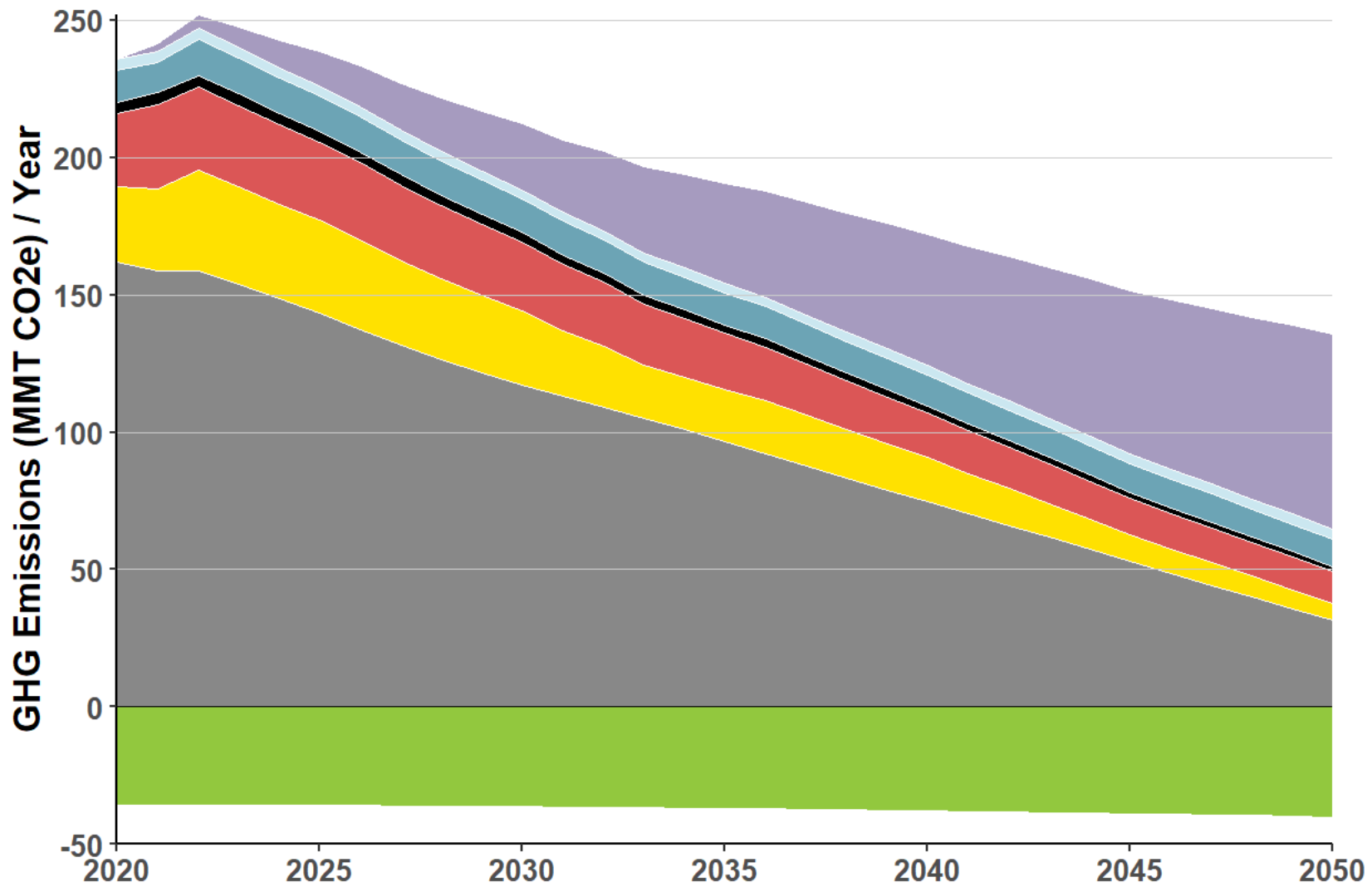
See Tech Memo for details on methods and assumptions, including documentation on policy settings used to analyze GHG consequences of the Draft Strategy and Action Portfolio

Initial Analysis of Full Draft Portfolio



- Reduces emissions by **~169 MMT CO₂e** in 2050
- Misses intermediate and 2050 emissions goals set by EO.

Initial Analysis of Full Draft Portfolio



Key Take-Aways

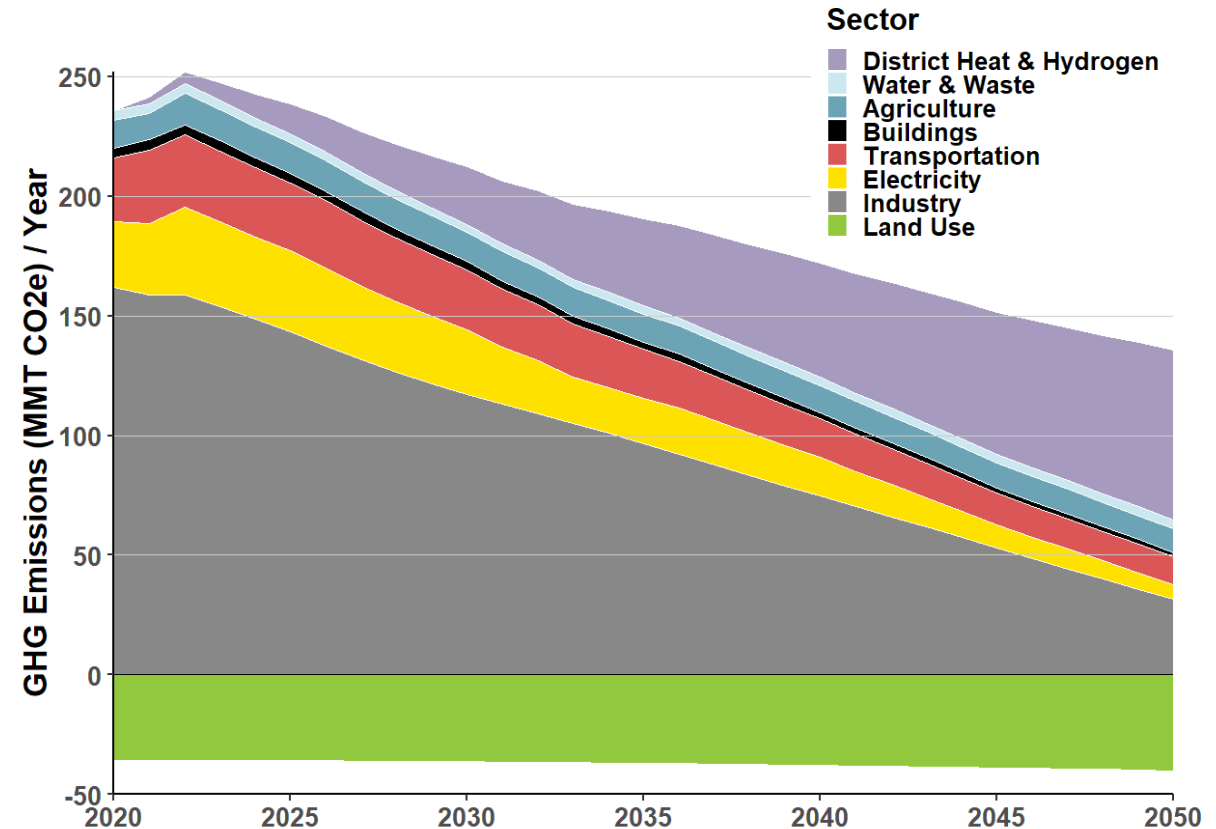
- Industrial emissions reduced (gray)
- Offset by increased emissions from hydrogen production (purple)
- Transportation (red) and electricity (yellow) reduced

Sector

- District Heat & Hydrogen
- Water & Waste
- Agriculture
- Buildings
- Transportation
- Electricity
- Industry
- Land Use

High-Level Takeaways

- Draft Portfolio not enough to meet the emissions reduction goals set out in the Executive Order.
- Electrification and fuel switching will create a **huge demand for electricity and hydrogen**. Providing green hydrogen and renewable electricity will be critical to meet this need. Without green hydrogen, emissions from hydrogen production increase as seen here.
- To meet the increased electricity demand, the portfolio must consider **peak demand, transmission, and storage**, in addition to setting standards for renewable and clean generation.

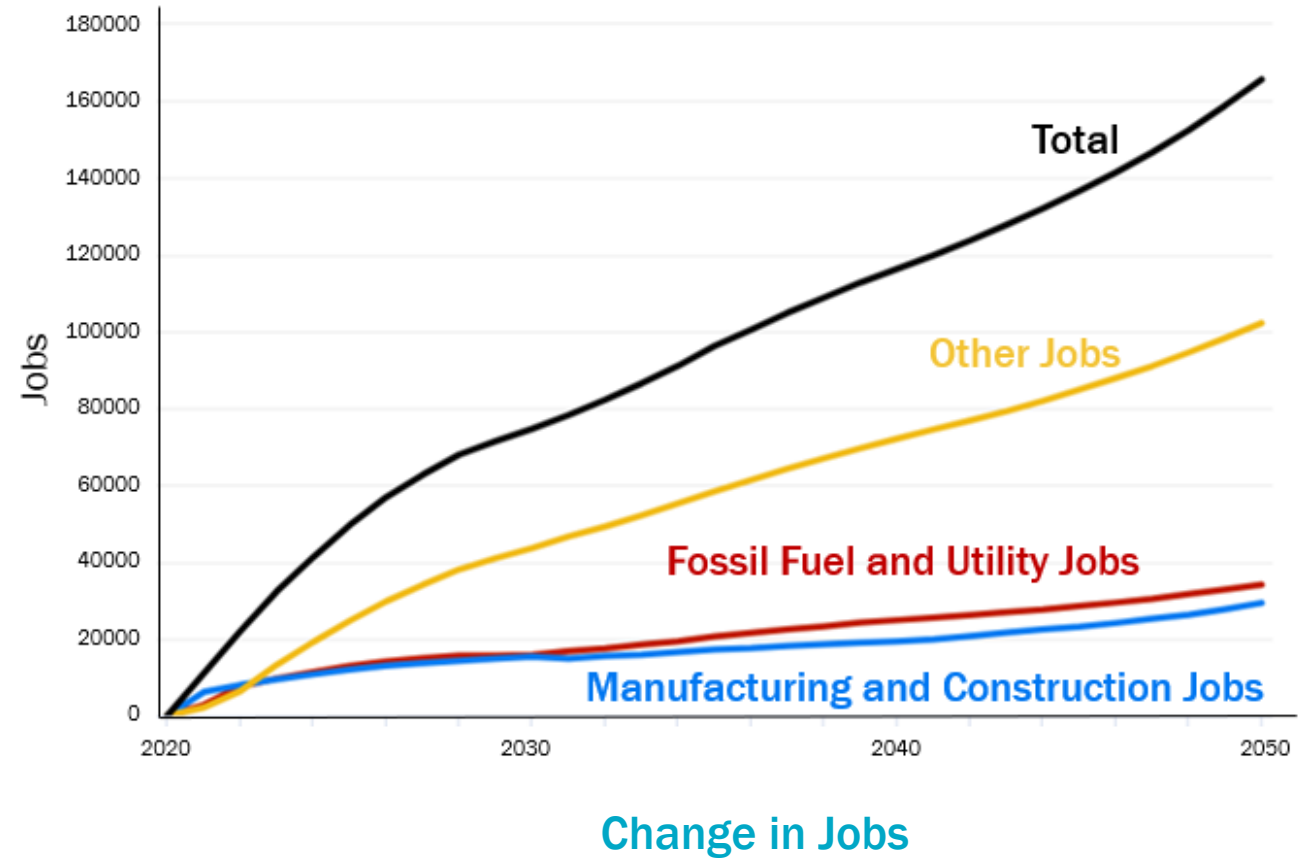


High-Level Takeaways

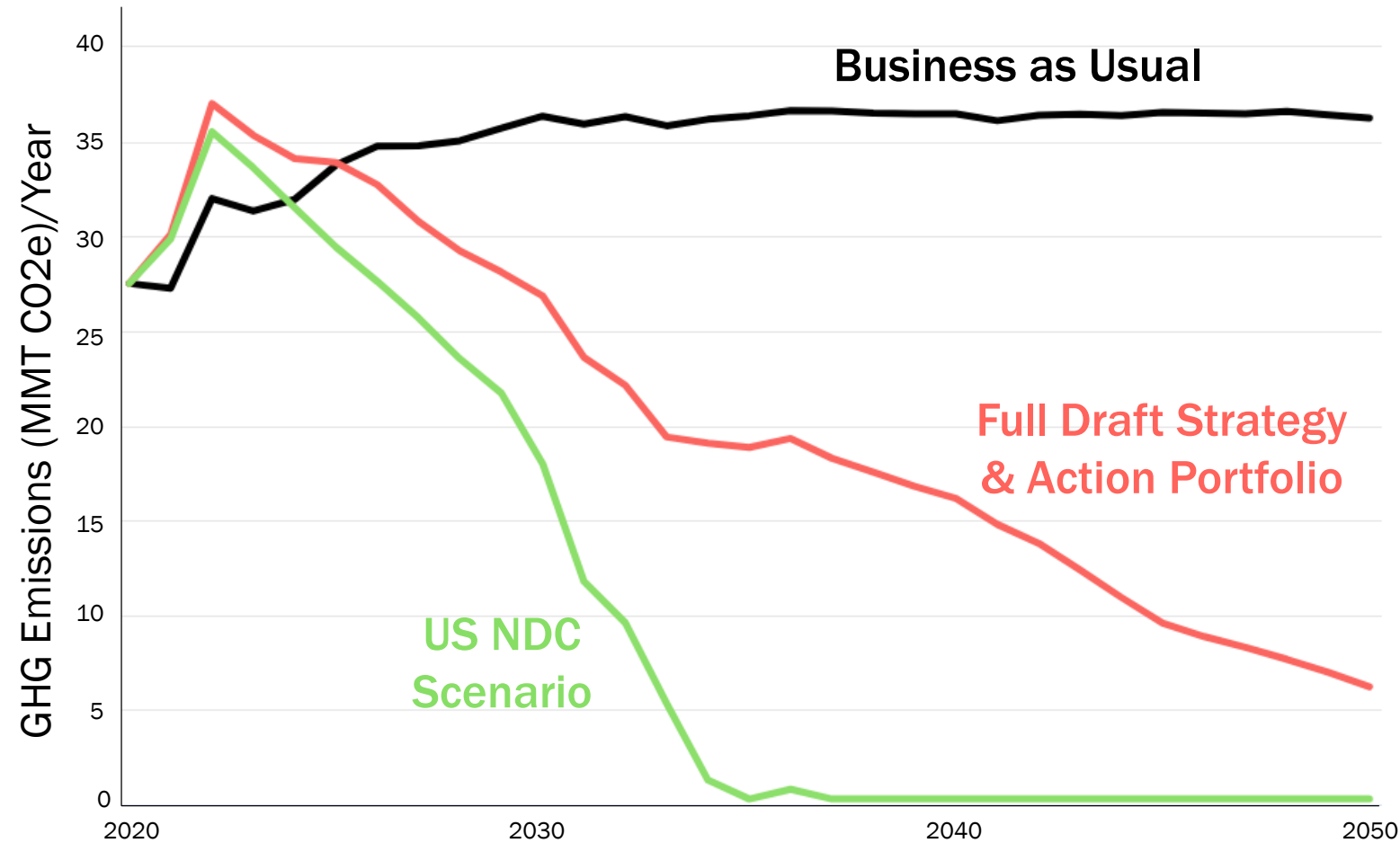
This portfolio's modeled results include benefits to other fundamental objectives.

By 2050 we see the following:

- Over **165,000** net new jobs
- Over **1,800** premature deaths per year avoided
- Nearly **55,000** asthma attacks per year avoided



Electricity Sector Emissions



The modeled Draft Portfolio shows a steady decline in Electricity Sector emissions, with some residual emissions in 2050.

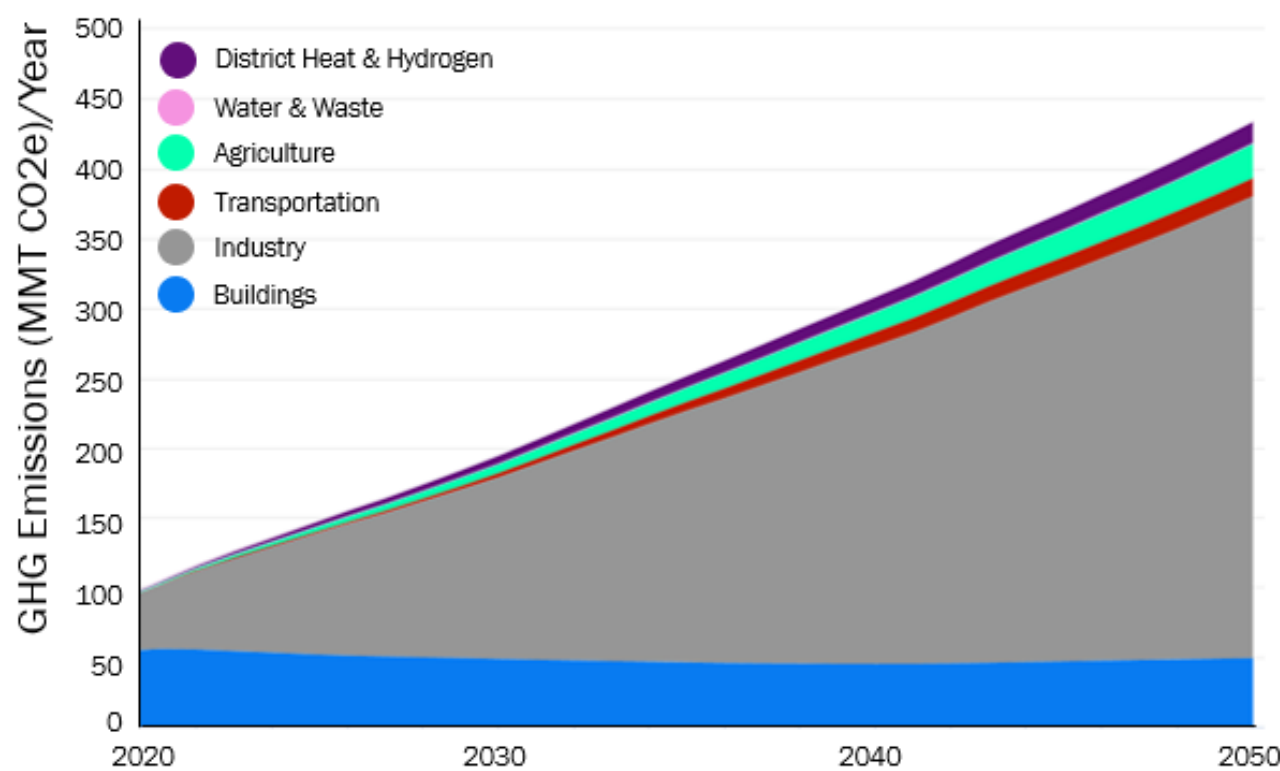
The US NDC scenario is even more aggressive, reaching zero electricity sector emissions by 2035.

Some differences in policy settings in the US NDC vs LA Draft Portfolio scenarios:

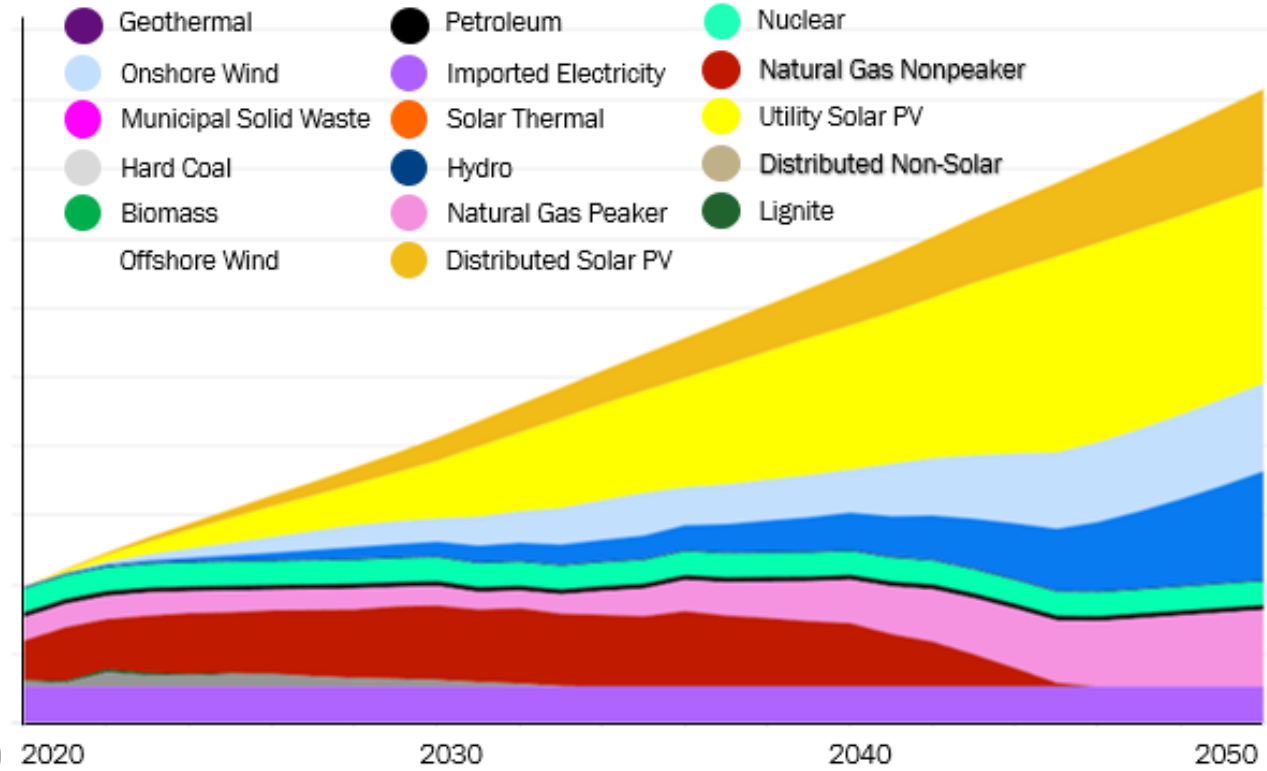
- 100% clean electricity standard by 2035 vs. 2050
- Banning new coal and gas power plants
- Add demand response capacity
- Greater increase in grid-scale storage
- Greater increase in transmission
- Greater subsidies for solar, nuclear, onshore and offshore wind

Electricity Sector – Demand and Generation

➤ *Increased electricity demand is a critical part of the story.*
The model anticipates generation to increase by **over 4X** by 2050, largely due to electrification within the Industrial Sector.

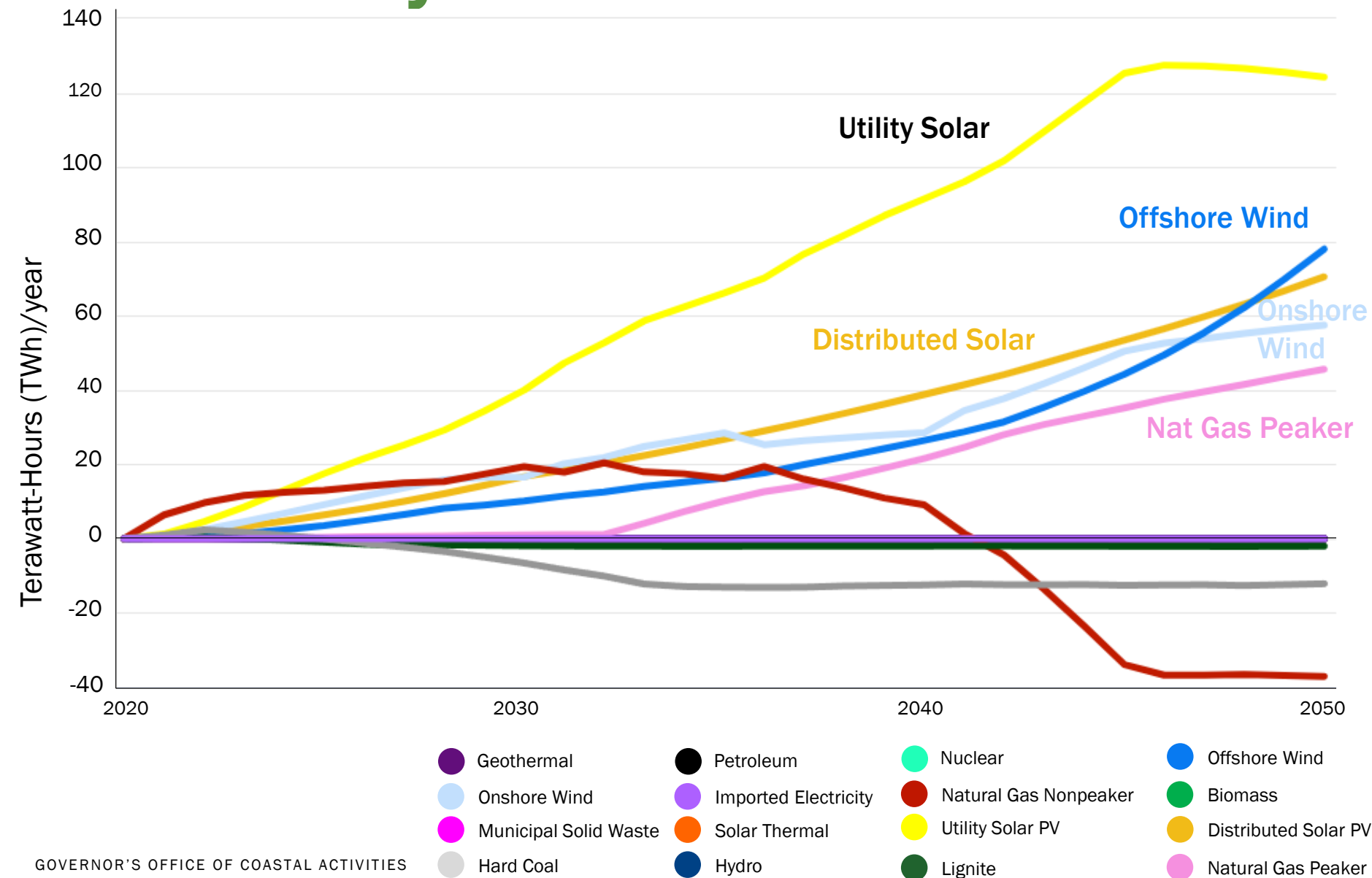


Electricity Demand By Sector



Electricity Generation By Source

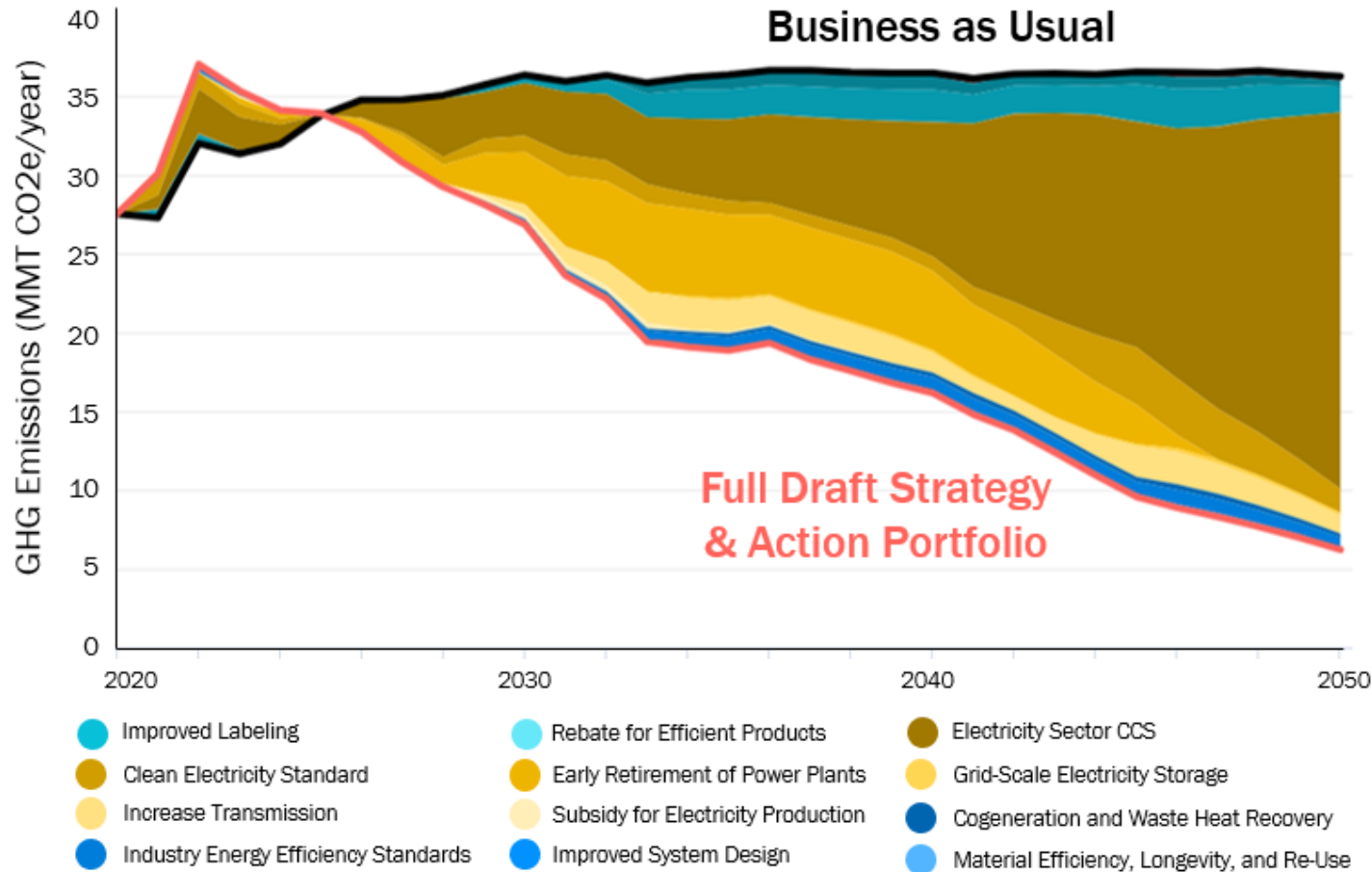
Electricity Sector - Policies



The model builds increased generation in:

- Utility Solar and Onshore Wind (generally cost driven)
- Offshore wind (modeled with a \$20/MWh subsidy)
- Distributed solar
- Nat gas peaker (necessary to provide peak energy because of limits to demand response and grid storage)

Electricity Sector - Policies

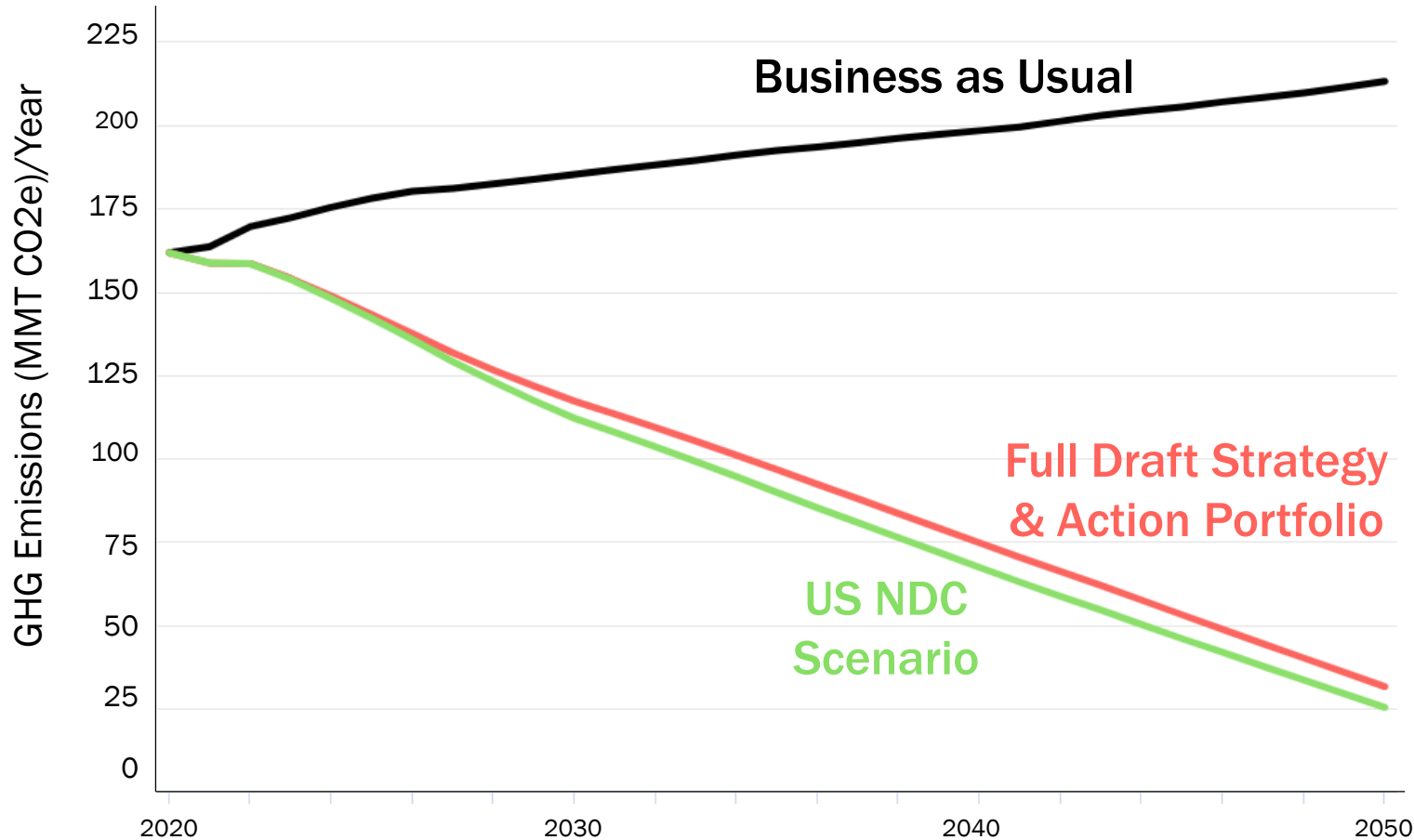


➤ **NOTE: The Technical Memorandum details the model settings for each of these policies.**

Key Take-Aways and Caveats

- There are built-in limits in the model, specifically on how peak demand is met.
- Despite the clean electricity standard, the model increases natural gas generation at peaker plants to meet peak demand. CCS is set to capture 95% of those emissions in the model.
- The model treats Louisiana as an island. In real life, we could meet additional demand through improved transmission of regionally generated power.
- Without improved transmission and demand-response capabilities, the peaker plants remain online in the model.

Industrial Sector Emissions



Draft Portfolio model results show significant cuts in Industrial Sector emissions, tracking close to the US NDC scenario

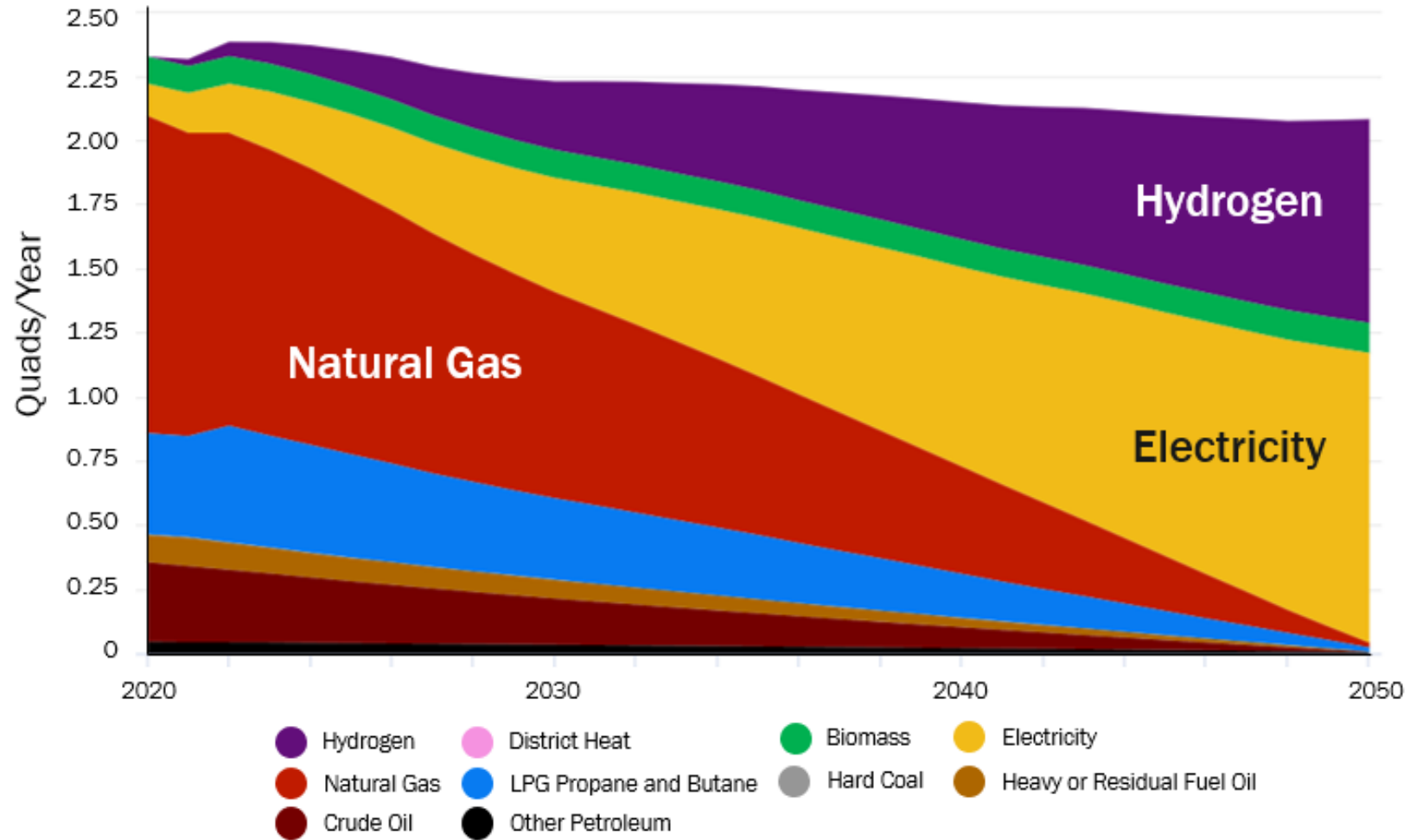
Difference in policy settings in the US NDC vs LA Draft Portfolio scenarios:

- LA Draft Portfolio does not address F-Gases at industrial facilities

➤ *But these emissions are not the whole story...*

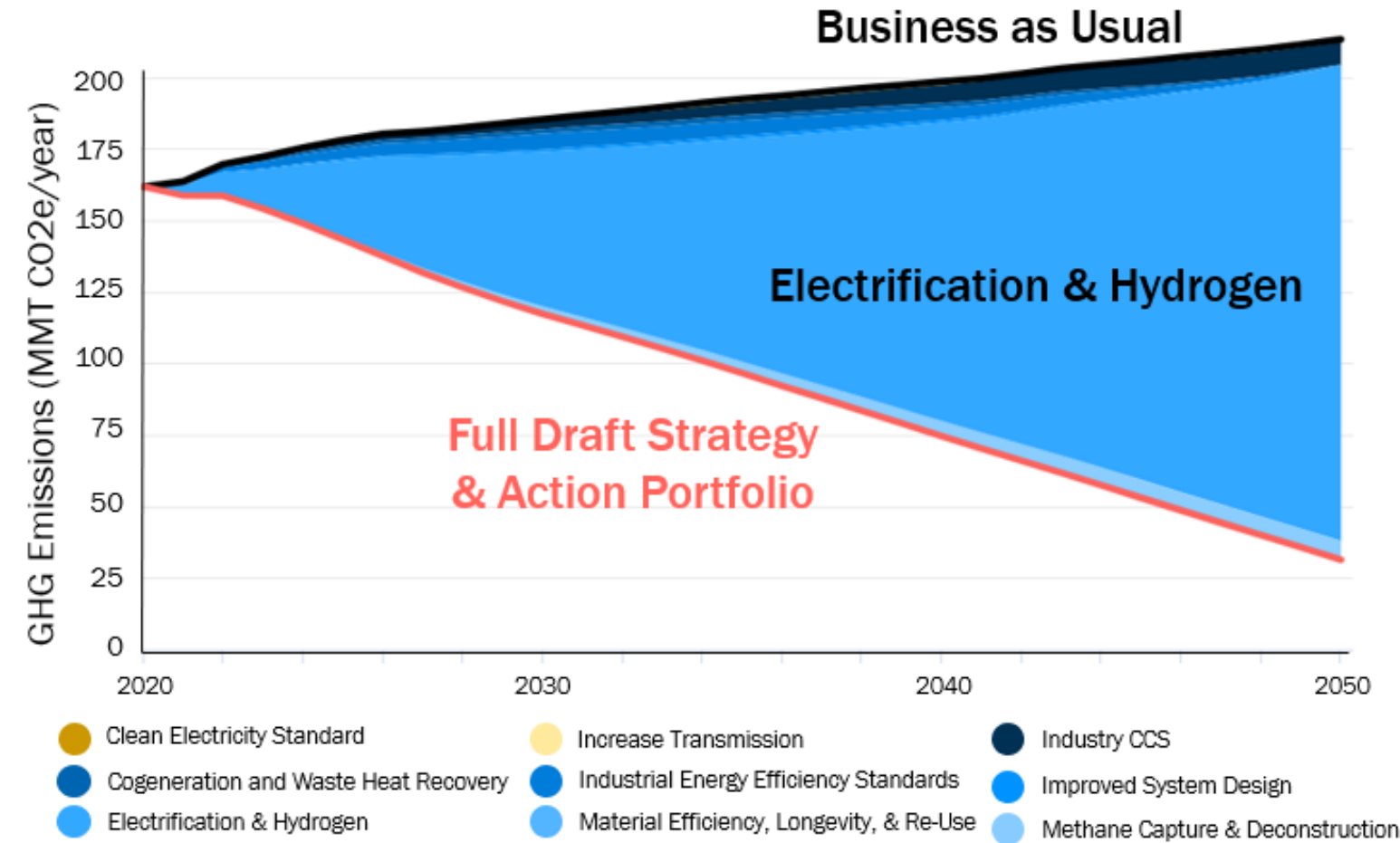
Industrial Sector – Fuel Use

➤ *Industrial fuel demand has declined only to the level of the efficiency standards – it has shifted to hydrogen and electricity.*



Fuel Use by Fuel Type (Excluding Feedstocks)

Industrial Sector - Policies

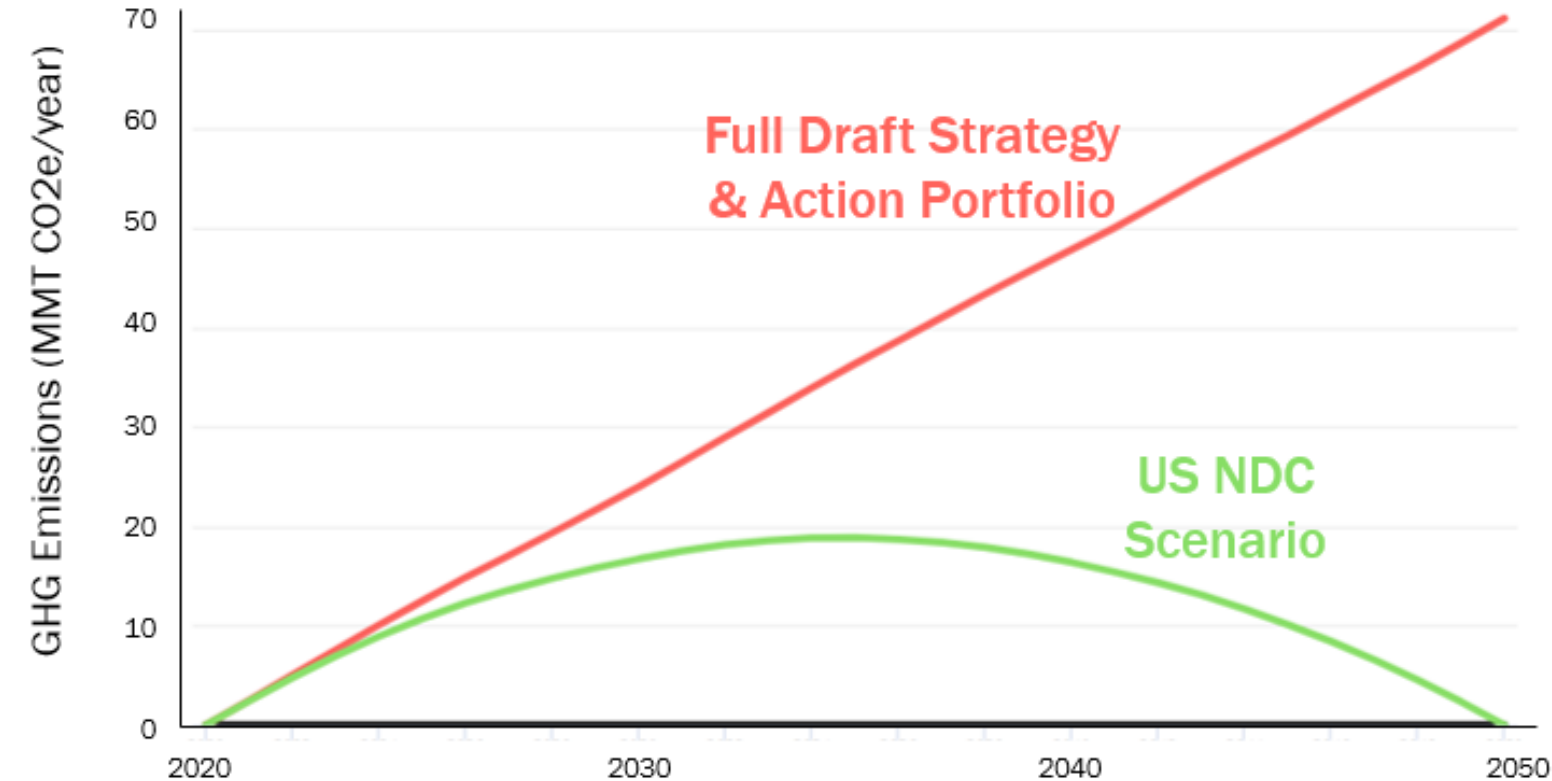


Key Take-Aways and Caveats

- The vast majority of modeled industrial emissions reductions are from electrification and hydrogen.
- A much smaller portion are from CCS (the dark blue at the top) and methane policies (the light blue at the bottom).
- We used the US NDC scenario's percentage shifts to electrification and hydrogen by industry sector.

➤ **NOTE: The Technical Memorandum details the model settings for each of these policies.**

Hydrogen Emissions



Modeled Draft Portfolio takes industrial hydrogen demand and produces it with current methods.

The US NDC scenario sets hydrogen production to **100% electrolysis by 2050**, bending hydrogen emissions to zero.

Blue hydrogen is not a policy option in the EPS tool but may work well in Louisiana.

➤ **NOTE: Hydrogen production by electrolysis would increase electricity demand even further, increasing the need for additional production (or imports via transmission) from renewables.**

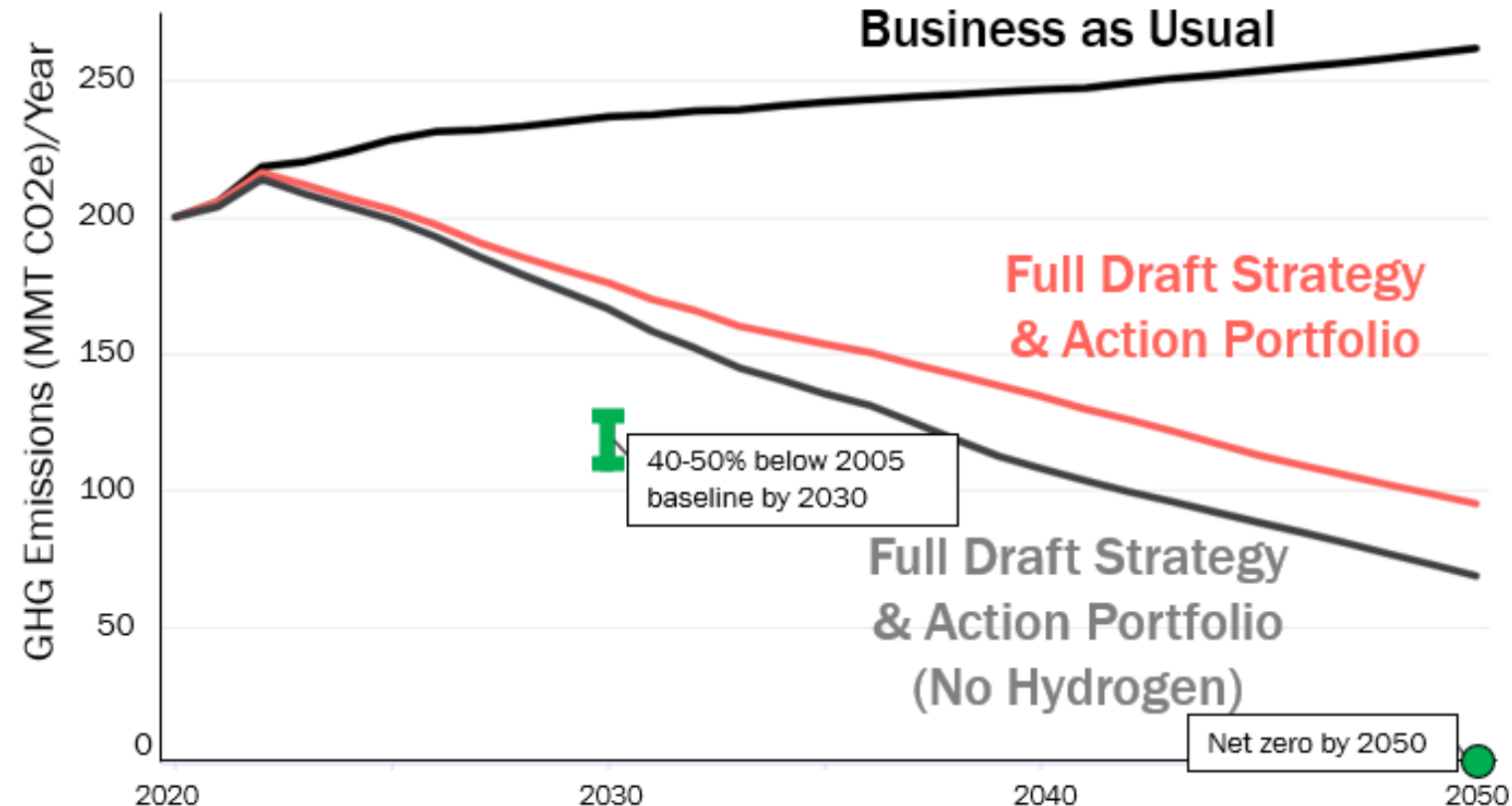
Learning from this analysis: Hydrogen

Is fuel switching to hydrogen the right policy for Louisiana in the short-term?

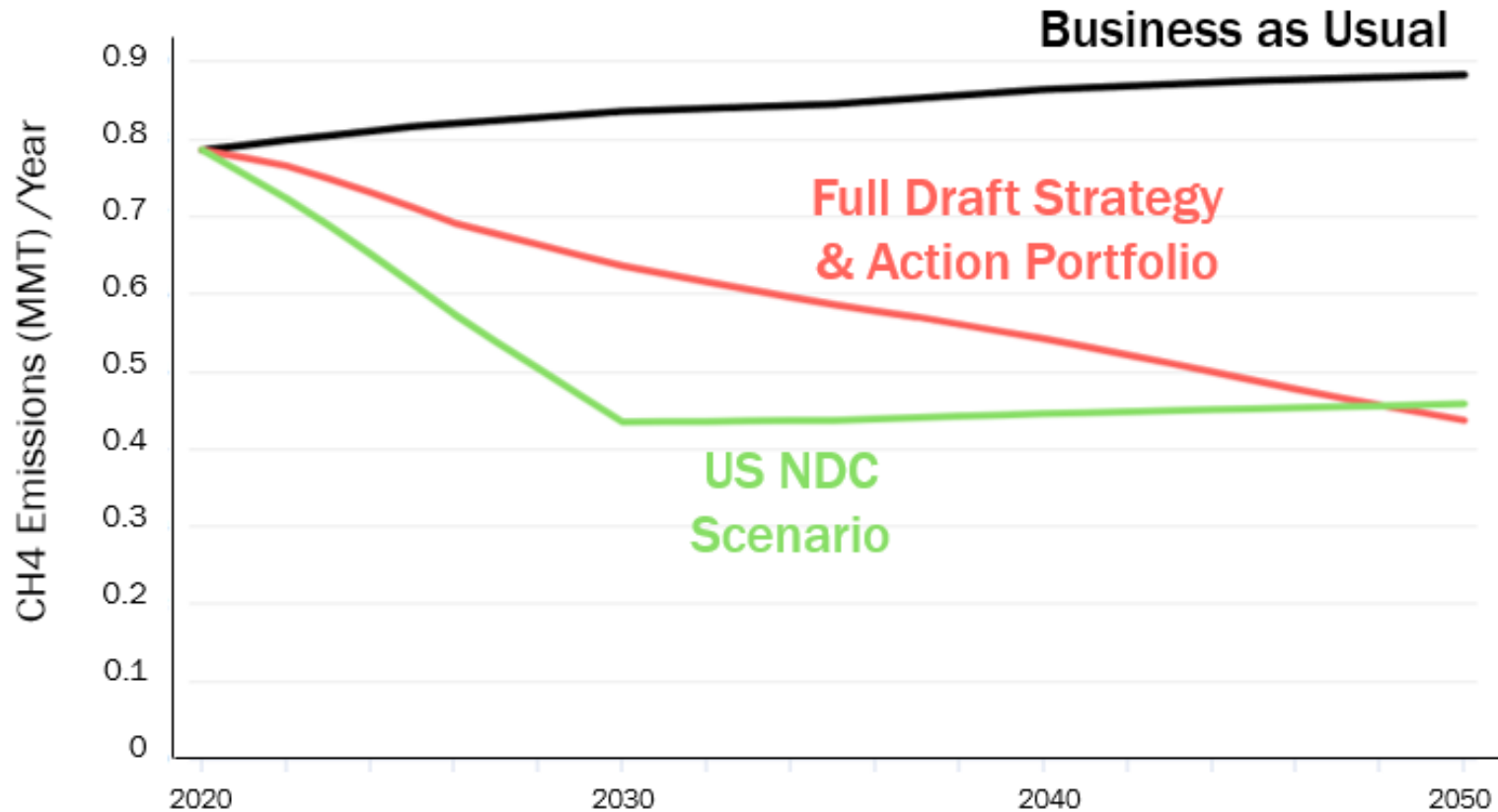
Shifting from natural gas to hydrogen without abating the GHG footprint of making the hydrogen may result in *more* emissions than the BAU scenario.

With no industrial fuel switching to gray hydrogen, the portfolio performed better (bottom line, at right) by ~26 MMT in 2050.

This also likely represents a more realistic implementation pathway for the current Draft Portfolio.



Methane Emissions: Tricky to model



Draft Portfolio performs similarly to the US NDC scenario on methane emissions

However, there are policy gaps in the EPS Tool:

- EPS tool does not have policies addressing legacy infrastructure (abandoned wells and pipelines), which LA Draft Portfolio actions cover

➤ **NOTE: The methane policies in the tool are not a great match for our actions; confidence in these modeled results is low.**

Methane – Draft Actions vs. EPS Policies

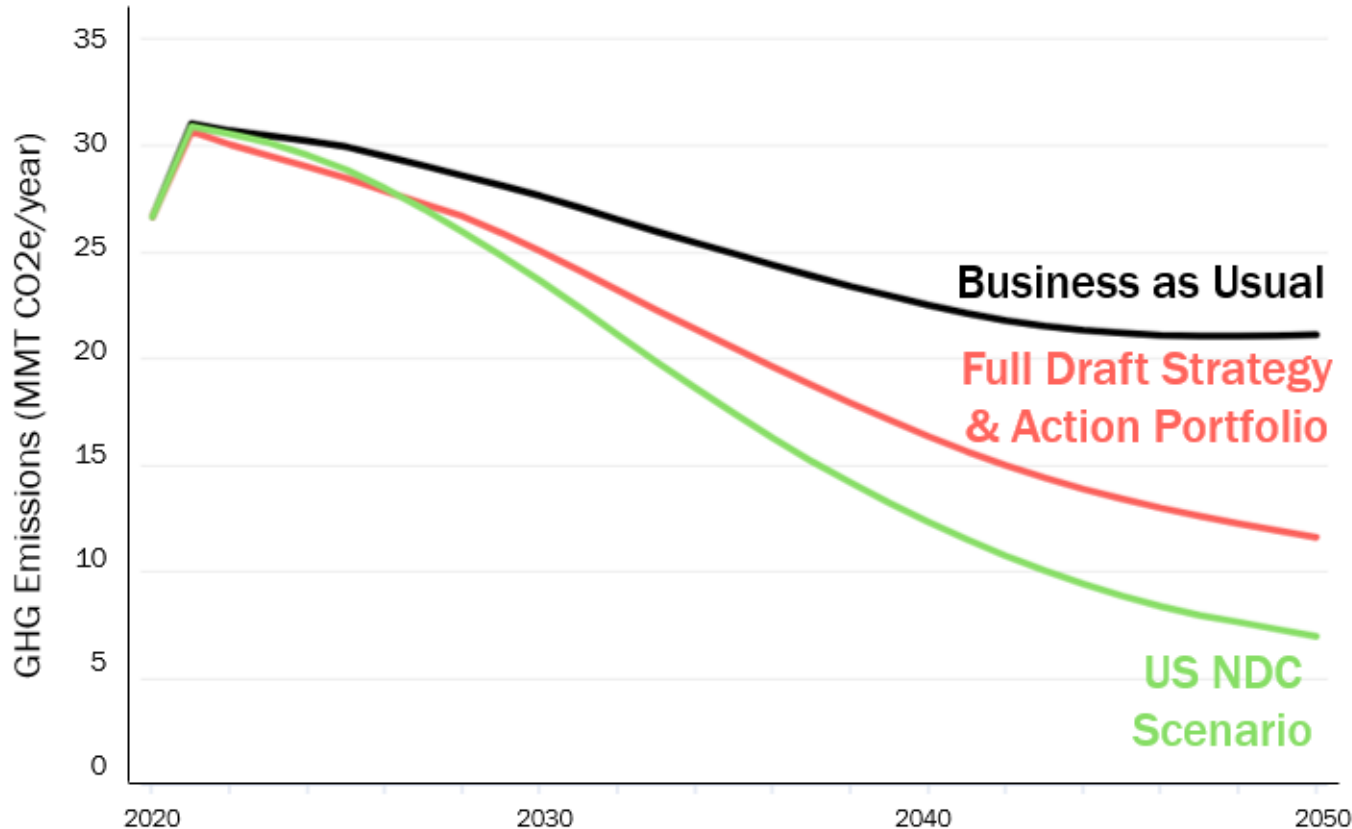
Eight actions across two strategies:

1. Orphan well owner accountability
2. Strengthen financial security requirements
3. Tighten ‘future utility’ designation
4. Increase OSR funding
5. Train workers to plug wells
6. Methane waste rules
7. Methane Monitoring program
8. Leak Detection and Repair (LDAR) program

Modeled two EPS policies:

1. Methane destruction (increase flaring of what would have been vented)
2. Methane capture (increase capture of methane by stopping leaks)
 - Both policies are “potential” based but unclear what max is for oil/gas extraction or energy pipelines/gas processing.
 - Only around ~6 MMTCO₂ of impact in 2050
 - *Do these policies best represent this set of actions?*

Transportation Sector Emissions



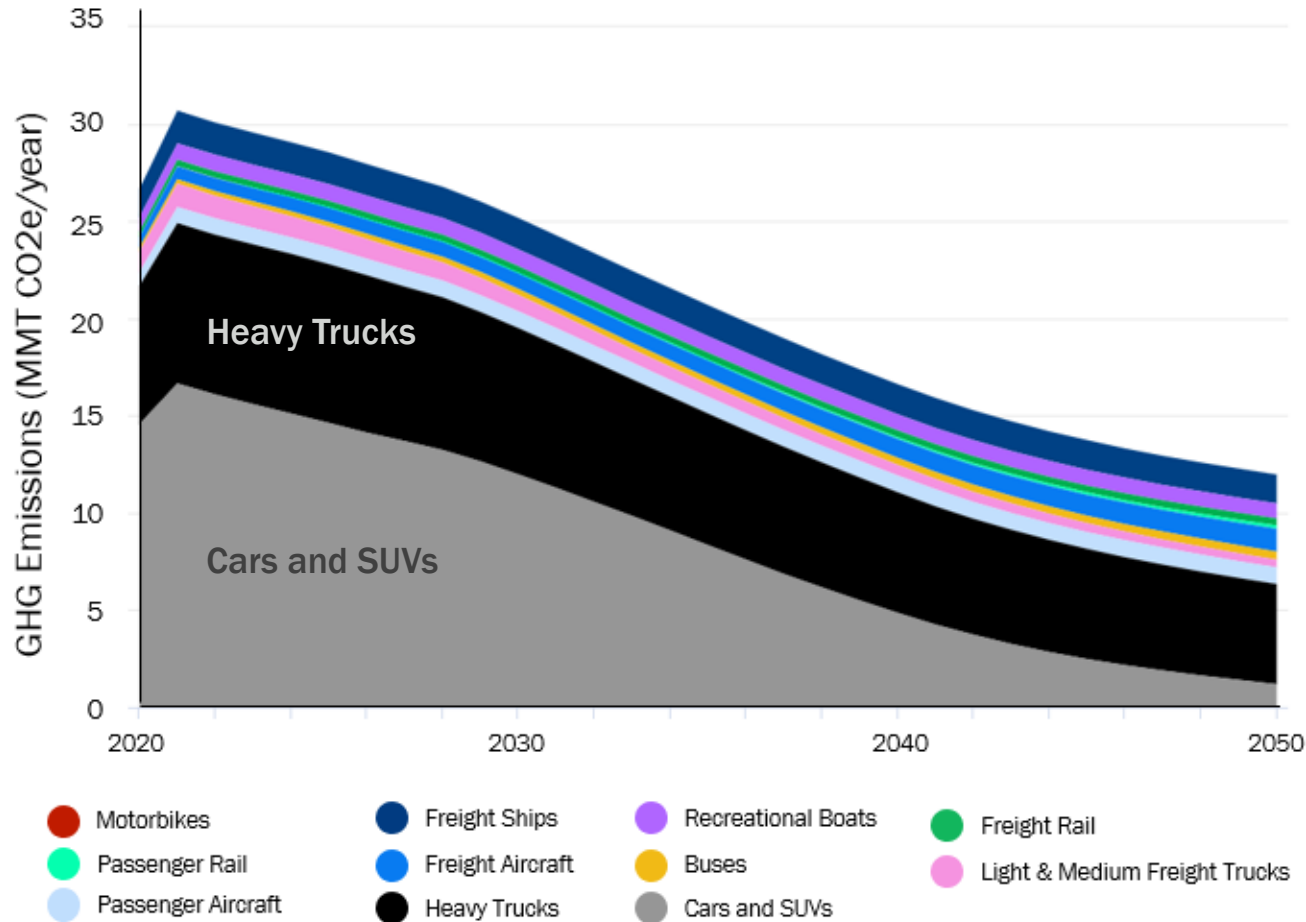
Draft Portfolio models a decrease in Transportation Sector emissions relative to BAU, with some residual emissions in 2050.

The US NDC Scenario is more aggressive, but also has residual transportation emissions in 2050.

Major difference in policy settings in the US NDC vs LA Draft Portfolio scenarios:

- Stronger electric vehicle sales standard, requiring 100% of passenger and freight vehicle sales to be electric by 2035.

Transportation Sector Emissions



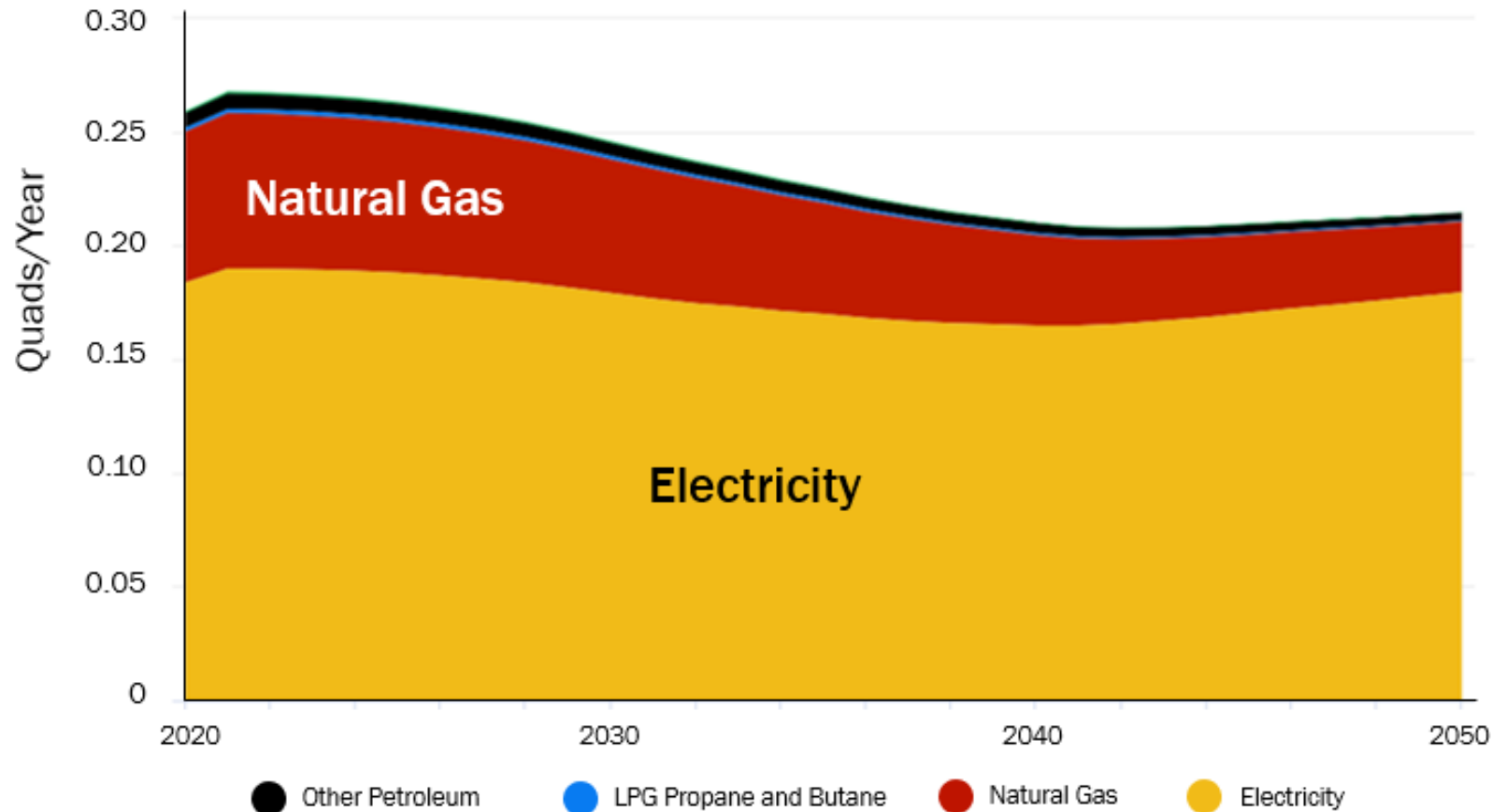
Emissions by Vehicle Type

Key Take-Aways and Caveats

- Decreases in emissions from cars and SUVs drives the bulk of emissions reductions in the Transportation Sector.
- Efficiencies that might result from federal action (e.g., fuel economy standards) are not explicitly modeled here.
- The modeled results show that more action is needed on trucks and freight, but we were not able to precisely model several freight-related actions in our portfolio.

➤ **NOTE: The Technical Memorandum details the model settings for each policy.**

Building Emissions



Emissions by Energy Source

- Building energy use was not greatly impacted by the modeled policies.
- Some shift away from natural gas to electricity is seen in building energy use.

Strategies with minimal modeled reductions

(Including notes on data gaps and modeling challenges)

STRATEGIES 16-18: Natural and Working Lands and Wetlands

- We have few options beyond what we did for the Natural Sequestration hypothetical portfolio back in June. That yielded ~4.5 MMT reductions in 2050.
- The work to calculate carbon sequestration impacts by wetland habitat over time may impact this, positively or negatively. To be able to guide implementation, we need further study of land carbon potential.

STRATEGY 2: Increase renewable electricity generation and access for all users

- In the model, the policies here representing our actions did not yield big reductions in emissions.
- Several key actions we couldn't model: Utility Green Tariffs, Power Purchase Agreements, Net Metering, ERGS Program

STRATEGY 6: Promote reduced-carbon materials

- Similarly, the policies did not yield big reductions.
- A “Buy Clean Louisiana” policy would likely have demand-side impacts within and outside the state – but the model treats Louisiana like an island.

Actions that can't be modeled in EPS

Enabling Actions

- Some actions are necessary to achieve the modeled impacts seen in our portfolio
- Many of the EPS policies require multiple actions to establish the regulatory or business environment in which the impacts could be realized
- This level of detail makes our portfolio more tailored to implementation in Louisiana

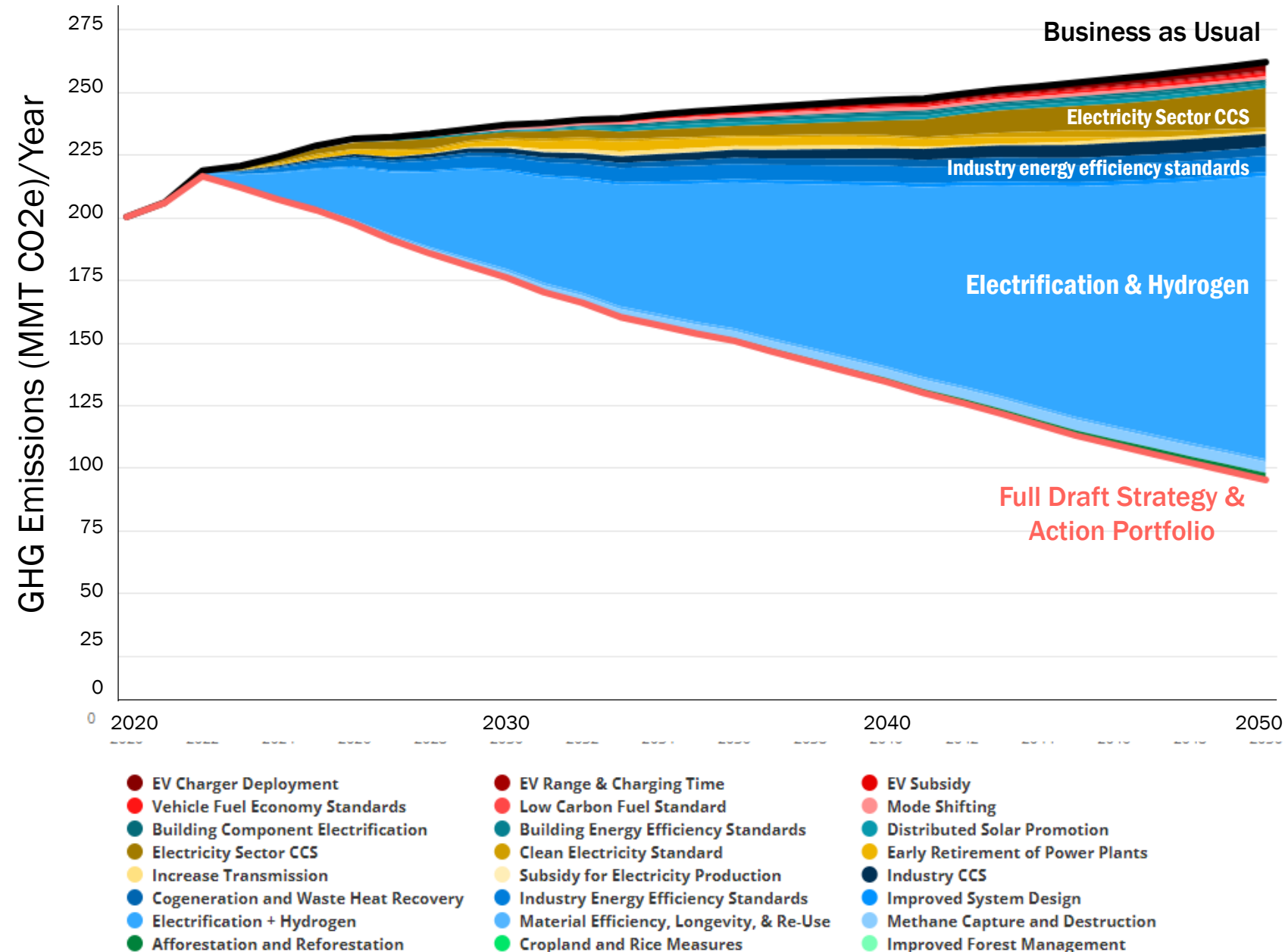
Non-Quantifiable Actions

- Some actions do not specify a target or metric that can be modeled
 - *Example:* a ridership or mode shift target for increased transit service
 - *Example:* an emissions cap for regional cap and trade
- Some actions are more about the “how” we achieve emissions reductions
 - *Example:* compact development and land use planning
 - *Example:* prioritizing Louisiana workers and businesses
 - *Example:* urban tree canopy expansion

Full Portfolio Policy Breakdown

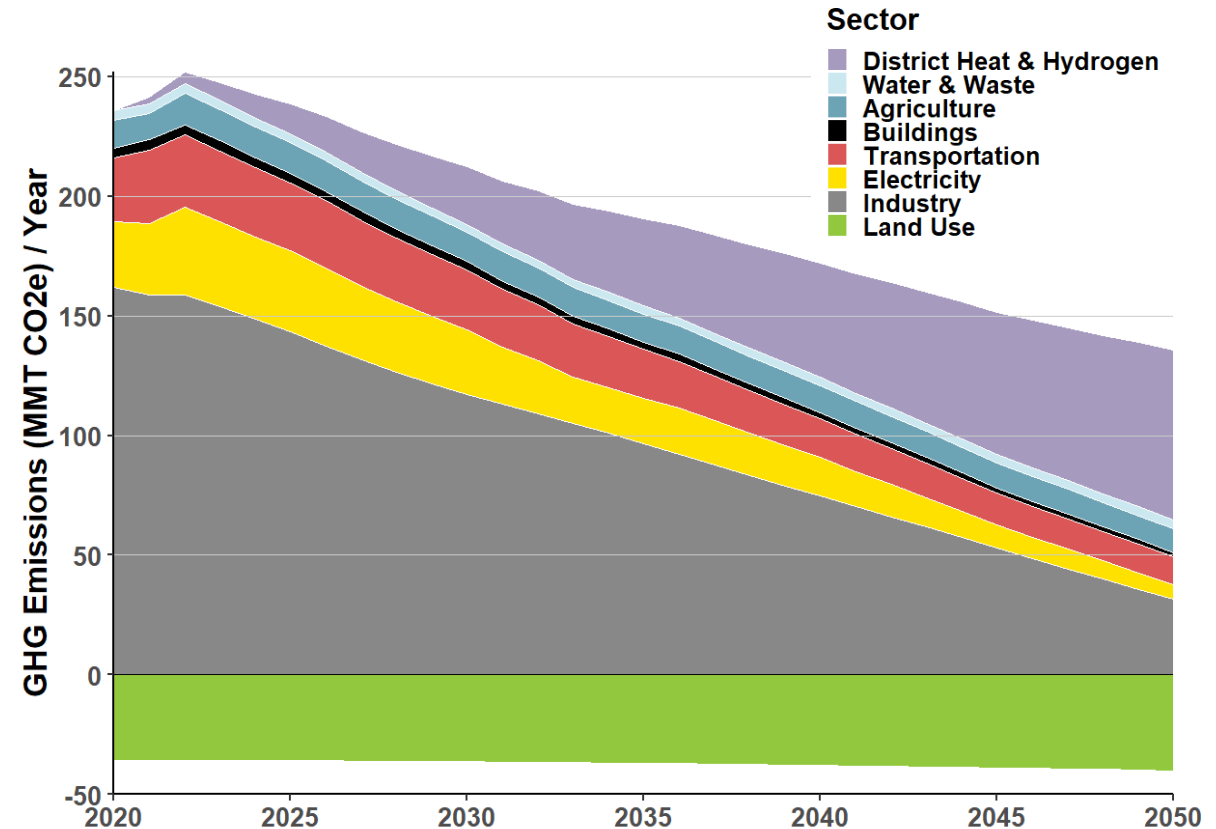
➤ Which policies are driving the modeled reductions?

- Industrial electrification and hydrogen (big blue wedge)
- Industry energy efficiency standards
- Electricity sector CCS (on Nat Gas peaker, nonpeaker, and biomass only)



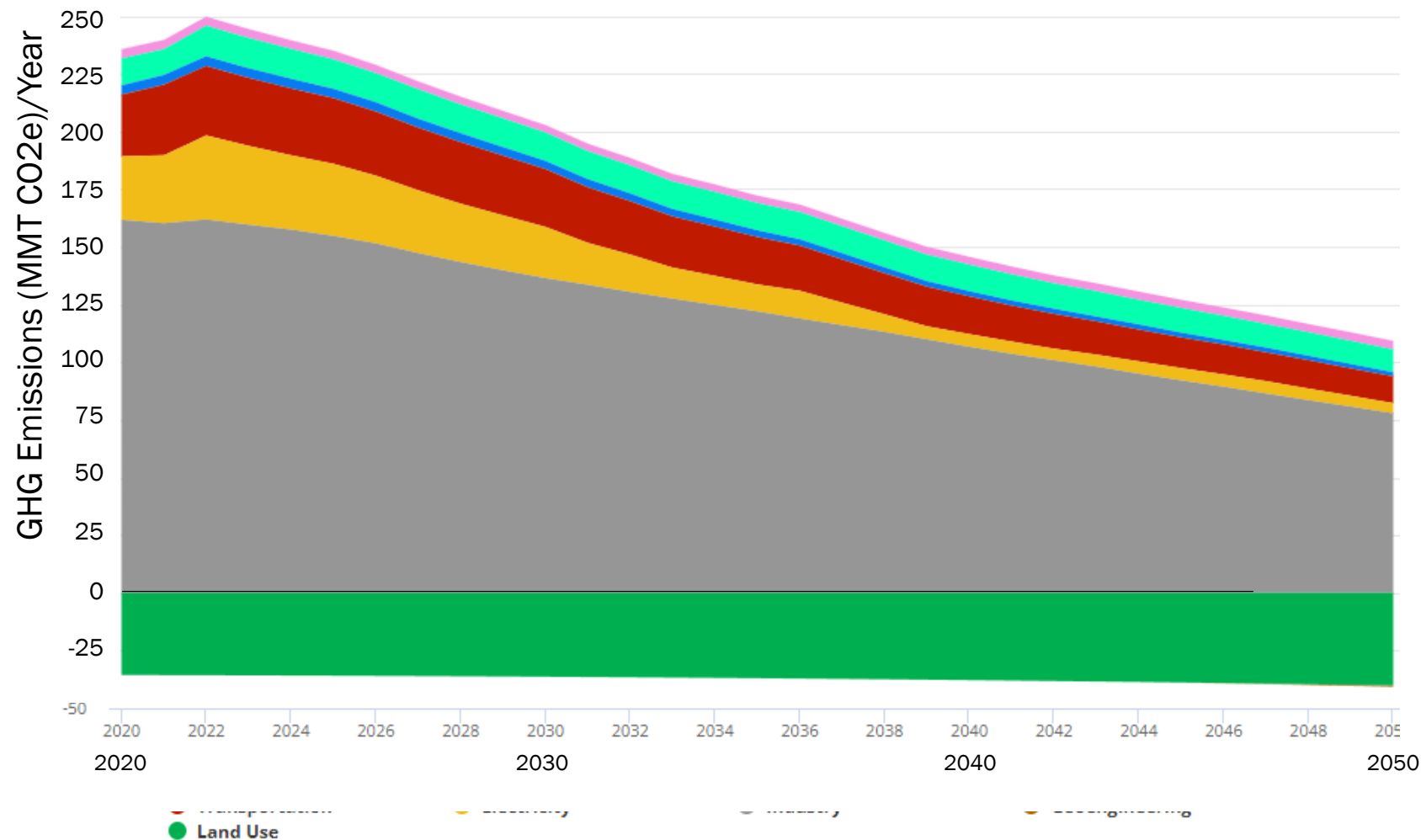
High-Level Takeaways

- Draft Portfolio not enough to meet the emissions reduction goals set out in the Executive Order.
- The Louisiana EPS has some limitations that prevent us from projecting all impacts.
- Industrial Electrification will create a **huge demand for renewable electricity**.
- For industrial fuel-switching to be effective, hydrogen must be green or blue, and emissions must be abated along the entire chain of production.
- To meet the increased electricity demand, the portfolio must consider **peak demand, transmission, and storage**, in addition to setting stronger standards for renewable and clean generation.



High-Level Takeaways

- When we remove industrial hydrogen switching from the portfolio modeling:
 - More industrial emissions
 - No offsetting hydrogen production emissions
 - Better emissions performance overall



Key Limitations of the Tool

Limitations of Inputs:

- Questions about methane
- Detailed facility-level emissions data
- Land use carbon flux impacts

Limitations of Policies:

- Blue hydrogen
- Decommissioning/legacy infrastructure
- Louisiana-specific land uses (e.g. wetlands)

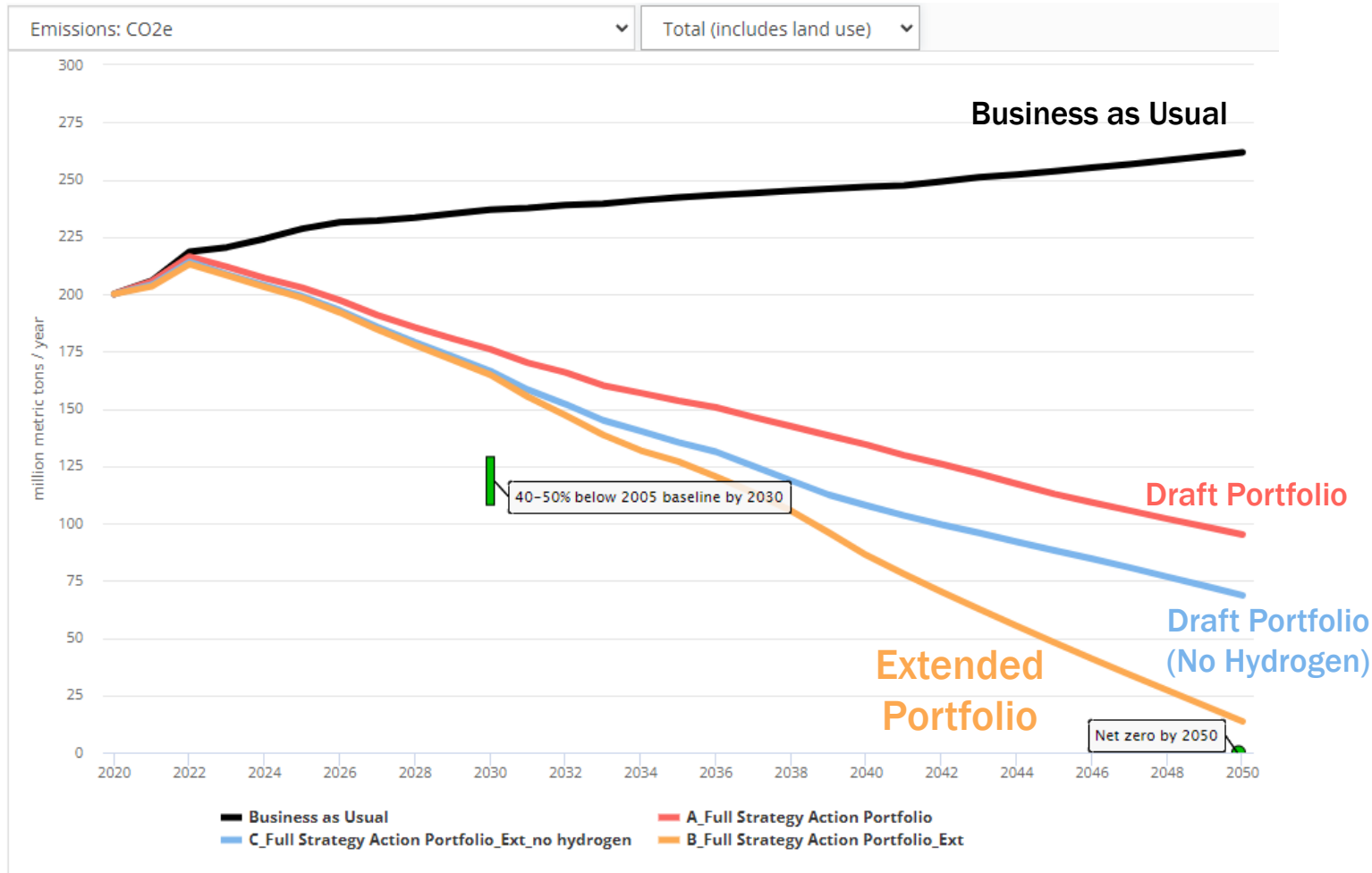
Limitations of Analysis/Conclusions:

- Predicting human behavioral change
- Predicting exogenous impacts especially in the out years (e.g. climate related disruptions, like hurricanes)
- Regional actions or coordination
- Federal actions beyond assumptions in the BAU case
- Global trends and shifts in demand, consumption, markets, etc.

Portfolio Improvements Based on GHG Evaluation

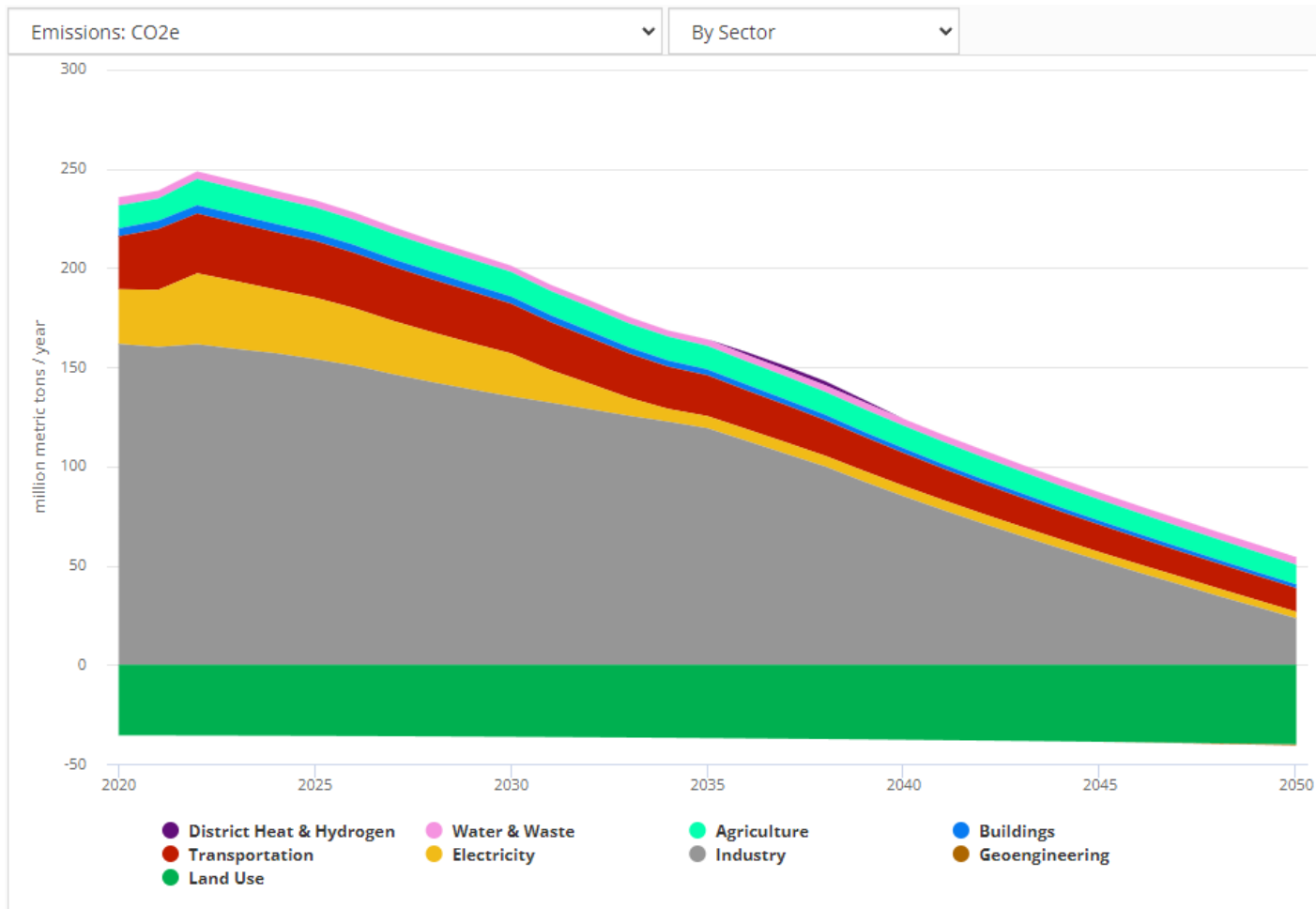
- Strengthen Actions to the Draft Portfolio
 1. IDENTIFY blue and green hydrogen as low-carbon alternatives in heavy industry
 2. STRENGTHEN industrial-scale electrification actions through incentives and regulation
 3. STRENGTHEN clean energy standard to 100% by 2035, from 50% by 2035
 4. STRENGTHEN enabling actions for generation, grid transmission, storage, and support regional transmission partnerships
 5. STRENGTHEN percentage of CCS to abate heavy industry process emissions
 6. SET a price on carbon
- Set goals and targets to accompany strategies and actions

Extended Portfolio



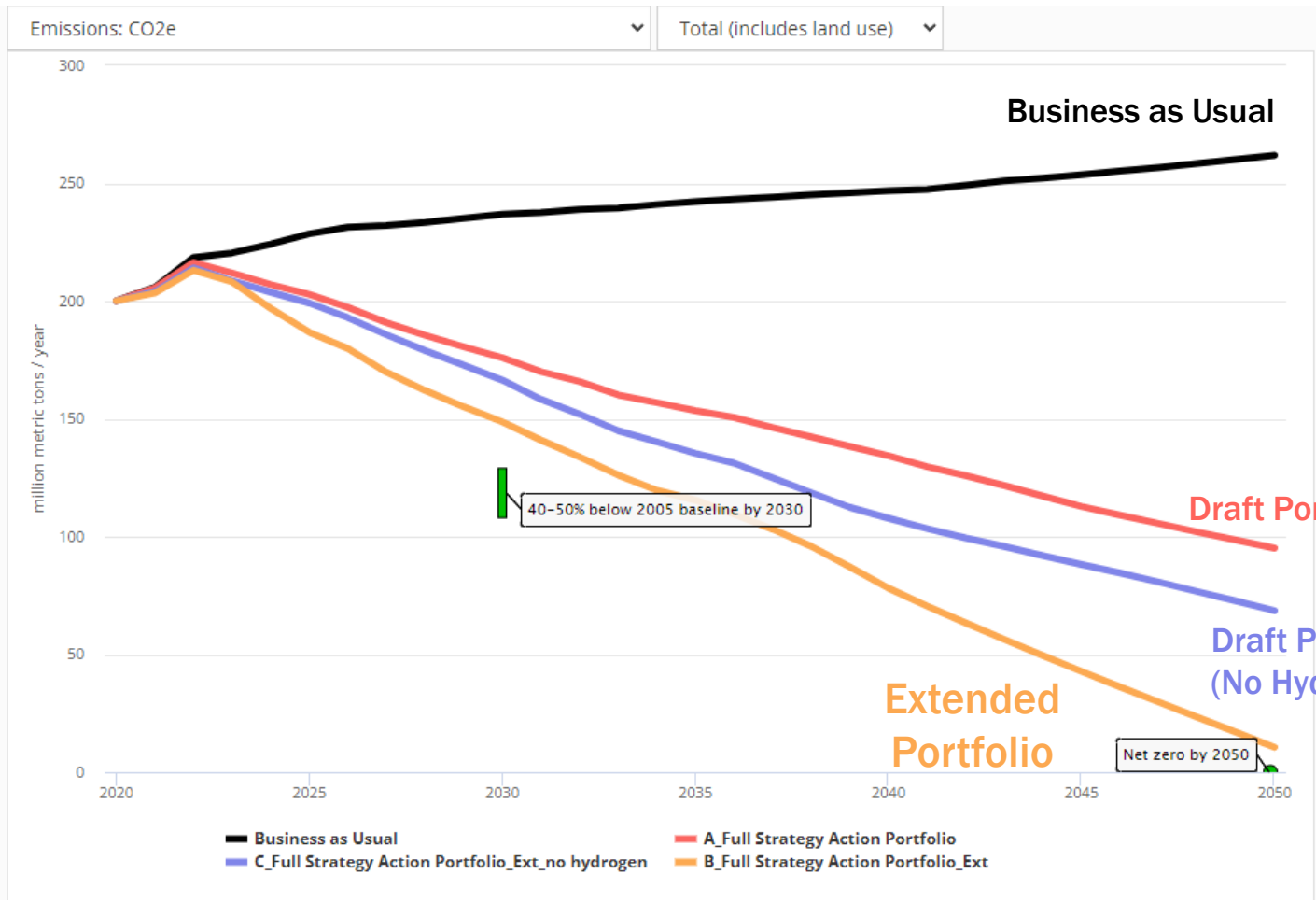
- Improves on the ‘no hydrogen switching’ portfolio (blue) by adding hydrogen production by electrolysis and delaying timing of fuel switching
- Increases CCS on process emissions
- Fully implements clean electricity standard by 2035
- Increases grid storage, demand response capability, and transmission capacity

Extended Portfolio – by sector



- Ramping up hydrogen production by electrolysis and then beginning fuel switching results in:
- No offsetting hydrogen production emissions
- Continued reductions in electricity sector emissions while meeting increased demand
- Continued reductions in industrial emissions

Extended Portfolio – with Carbon Price



With a carbon price of \$60/ton beginning in 2023 and fully implemented by 2030, performance is improved even further, especially in the earlier years of the scenario.

Portfolio Improvements

Based on non-GHG Objectives

- Clarify implementation timeline in details for actions; ensure prioritization of near-term action
- Include specific considerations for feasibility and implications of actions on downstream customers/ratepayers
- Ensure interconnectedness across sections of the plan to ensure co-benefits are maximized
- Ensure equity is intentional in action design with ongoing ways to track and measure progress

Draft Portfolio Input Received



Areas of Feedback

- ☐ Energy System
- ☐ Industry
- ☐ Price on Carbon
- ☐ Infrastructure
- ☐ Economy
- ☐ Transportation & Land Use
- ☐ Lands

Key Takeaways

- Extensive Funding Needs
- Economic Implications
- Implementation Timeline
- Near-term Priorities
- Feasibility
- Collaboration with and Building Upon Ongoing Work
- Uncertainty of Existing or Additional Authorities

Feedback: Energy System

OPPORTUNITIES

- Necessary to facilitate large-scale emissions reduction
- Renewables will be price competitive and independent of government subsidy through independent advantages
- Long-term sustainability and advancement towards near-term climate goals
- Potential to provide benefits to low-income residents with changes to actions
- Federal Funding (methane)

CONCERNS

- Buy-in from the Public Service Commission; other issues with jurisdiction (methane)
- How clean energy is defined
- Efficacy of energy efficiency as a priority
- Extensive costs associated with actions
- Potential to pass costs to rate payers
- Concerns about ability to keep Louisiana's economy competitive
- Potential redundancy with federal action

Feedback: Industry

OPPORTUNITIES

- Needed additional emphasis on electrification
- Preference for market-based mechanisms over regulation
- Preference for regulation over further incentives
- Produce new jobs and economies that pose fewer human and ecological risks
- Opportunity for Louisiana to lead the nation in green industry

CONCERNS

- Greater requirements for industry will be transferred as increased costs to ratepayers/customers
- Variety of size, type, and location of facilities requires complex action
- Development of new frameworks and permitting could become cumbersome
- Feasibility of needed rapid deployment of renewables and CCS technology to meet goals
- Regulatory hurdles in deploying and using renewables
- Continued concern over carbon capture and storage

Feedback: Price on Carbon

OPPORTUNITIES

- Support for market-based national or international price on carbon
- Carbon tax is more effective and less administratively cumbersome than a cap-and-trade
- Economy-wide mechanism is more effective and comprehensive than industry or utility specific
- The role of offsets and use of revenue from credit sales can add value to our ecosystem and economy once determined

CONCERNS

- Carbon pricing is complex and must be thoughtfully planned and executed
- More detail is needed on how allowances are allocated, tracked, reported, and accounted for
- Cap and trade provides allowances for pollution to continue, impacting fence-line communities

Feedback: Infrastructure

OPPORTUNITIES

- Regional transmission is essential for future grid demand
- Early pilot projects for solar can be prioritized in underserved communities
- Reducing methane through fugitive emissions and legacy infrastructure
- Federal funds are available with successful advocacy
- Potential for positive impacts on historically disadvantaged (frontline) communities
- Prioritizing capacity of agencies to execute actions

CONCERNS

- Lack of detailed and explicit implementation pathway
- Level of stakeholder engagement in updating permitting and siting plans
- Uncertainty of existing processes and specific areas for improvement
- Uncertainty in existing jurisdiction and rules
- Potential negative impacts of future infrastructure in marginalized "host" communities
- Development of new frameworks and permitting could become cumbersome

Feedback: Economy

OPPORTUNITIES

- Workforce development programs in solar and offshore wind could expand to include other sectors, such as low- and no-carbon fuels, onshore wind, and carbon utilization
- Employment is available in a wide range of environmental sectors
- Value of investment in locally-owned firms rather than large regional and national firms
- Potential to build on federal-level investments or programs like the climate corps

CONCERNS

- Community welfare is not limited to economy but needs to include health and well-being of people
- More tools than tax incentives--state should mitigate burdens placed on communities to attract investment
- Clarify existing role and programs of the Workforce Commission and where actions add new value

Feedback: Transportation & Land Use

OPPORTUNITIES

- Transformational for underserved populations and low-income families to access broadband and regional transit
- Explicit connection across VMT, regional transit, and land use actions will make all actions more effective
- Highlight the ongoing work of existing organizations to deploy EVs and plan infrastructure projects
- Land use planning is integral in community resilience

CONCERNS

- VMT does not address miles traveled by boats, planes, and helicopters
- Action is needed to monitor induced demand since VMTs only work with land use and regional transit
- "Electric vehicles" vs. "alternative fuels"
- Lack of authority and resource for increased funding, rural transit, and land use planning would make implementation challenging at the state level
- Specify purpose and need for land use planning at the state level

Feedback: Lands

OPPORTUNITIES

- Use of geospatial data analysis will support decision making for land conservation
- Goals can ensure forested area is preserved and increased
- Widespread support for wetland preservation and restoration as carbon sinks
- Widespread support for best management practices and transition to regenerative practices
- Urban tree canopies, green spaces, and agriculture offer multiple benefits for communities

CONCERNS

- Not sufficiently incentivizing or encouraging farmers to remove marginal lands from production
- Not sufficient detail or concrete (voluntary programs, or lack of specificity)
- Equity concerns need to be addressed on both coastal and forestry sides

Discussion

1) What does the Portfolio get right?

2) Where is the biggest need for improvement?

Next Steps



Timeline to Final Plan

Early-Mid November

GOCA reworks the Portfolio

Week of November 29

GOCA sends a revised portfolio to the Task Force and posted for public comment

Week of December 6/13

Task Force reconvenes to discuss Revised Portfolio

Week of December 13

Full Draft Plan, including Revised Portfolio, is released for public comment and feedback from Task Force

Week of January 10

CTF reconvenes to discuss comments and put forward revisions to final plan